University News

A WEEKLY JOURNAL OF HIGHER EDUCATION Vol 36 No 24 JUNE 15, 1998 Rs 35.00

HIGHER EDUCATION —A NON MERIT GOOD?

A Symposium

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UNIVERSITY NEWS

VOL. 36 **JUNE 15**
No. 24 **1998**
Price **Rs. 35.00**

A Weekly Journal of Higher Education published by the Association of Indian Universities

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Editor :
SUTINDER SINGH

From the President's Desk

The Department of Economic Affairs, Ministry of Finance, Government of India issued, in May 1997, a discussion paper *'Government Subsidies in India'* which sent out alarm signals throughout the country. It sought to differentiate between merit-goods or services, whose benefits spread beyond the immediate recipients, and non-merit goods or services whose benefits accrued primarily to the recipients. The paper further suggested the fiscal deficit could be reduced substantially by cutting down the subsidy on non-merit goods or services.

The academic community was particularly disturbed because the paper categorised higher education as a non-merit service. The implication was that, in coming years, government support to higher education would be steadily and grossly reduced. The mandarins of the finance ministry were apparently influenced by the thinking of the World Bank which believes that developing countries should concentrate their efforts on primary education. Higher education could take care of itself (or be taken care of by the developed countries). The crucial role of higher education in national development has apparently not been considered by the authors of the paper. Further, they have lost sight of the fact that it is higher education that provides the technological base so essential for economic development, and that it creates the competencies required in all spheres of human activity.

The implications of categorising higher education as a non-merit service have been discussed threadbare in the zonal and national conferences of the Association of Indian Universities. At the seventy second annual meeting of the Association, held in November, 1997, at the University of Jammu, Jammu, it was resolved to draw the attention of the Government to the fallacies in the assumptions made in the discussion paper, and to impress upon it the need to strongly support higher education in India. An AIU delegation recently met the Hon'ble Minister for Human Resource Development, and presented to him a memorandum, giving the views of the academic community, as also a publication *State Funding on Higher Education*, that had been specially prepared for this purpose. It is heartening that the hon'ble minister endorsed the views expressed by the delegation and indicated that he would take necessary action to generate support for the universities.

We believe that it is necessary to draw wide attention to the needs of higher education and to garner support from all possible sources for its financing at an adequate level. This special issue of *University News* is being brought out to create a wider understanding of the needs of the university sector and to draw the attention of the public to the responsibilities of government and society towards it. The views of well known educationists, presented in this special issue will, we hope, provide the necessary background and information, and help generate support for the higher education system.

S. Rinpoche

Government Subsidies for Higher Education

A.S. Desai*

Introduction

The role of education in socio-economic development has been universally acknowledged. It is also a well established fact that higher education contributes towards the development of competencies required by a nation in all aspects of life. It is higher education which prepares the human resources for the professions, for the administrative and defence services, for business and industry, for teaching and health services, and for leadership in all walks of life.

Recently, the Department of Economic Affairs, Ministry of Finance, Government of India, brought out a "Discussion Paper" (May, 1997) which could have very far reaching consequences on higher education. The premises on which it bases its policies on higher education would reduce it to the status of non-merit service. The time has arrived for the universities to have a detailed discussion on the issues it raises and how the university sector should plan to respond to these issues.

The Discussion Paper

The paper begins by stating that the Budget Speech for 1996-97 promised to place before the House a discussion paper on subsidies. This paper will list all the subsidies, visible and hidden, so that there can be an informed debate and a consensus on the overall subsidies as a precentage of GDP and their *appropriate targeting* (Government of India, DEA, 1997, p. 1). The opening paragraph further states that *"This paper is in response to that commitment. The purpose of this paper is to generate an informed debate and initiate a more open approach to subsidies"* (Government of India, DEA, 1997, p 1).

The Department of Economic Affairs' paper is based on a detailed research study by the National Institute of Public Finance and Policy, New Delhi. It provides an estimate of :

- the aggregate value of governmental subsidies
- its distribution across services provided by the government
- the extent of subsidization in various services (Government of India, DEA, 1997, p. 1).

The paper makes three important assumptions. The first assumption lies in the initial statement in which the paper clarifies that *"subsidies are advocated when the social benefits of a particular service or commodity are greater than the sum of private benefits to the consumers"*. Inoculation against infectious diseases, sanitation, environmental protection and basic education are cited as those which provide substantial social benefits. In these cases, there is a gap between *"the private valuation of the benefits of such services and their true value to society"* (Government of India, DEA, 1997, p. 1). Hence, *"the normal market mechanisms are insufficient to ensure an appropriate level of such services, and subsidies are advocated to provide the necessary corrective"* (Government of India, DEA, 1997, p. 2). These are merit goods and services which should attract subsidy.

On the other hand, such items as *"electricity, diesel, fertilizer and higher education"* are placed as non-merit goods and services with respect to subsidies, because the economists believe that *"there are normally no significant differences between private and social valuations in these areas"* (Government of India, DEA, 1997, p.2). Hence, in the language of economists, where there is a gap between individual and social valuation, there is an existence of *"externalities"*. The externalities allow for subsidies.

The second assumption is that *"subsidies that are administered to final consumption or production are considered to be more desirable since they accrue to the target beneficiaries directly"*, while it is stated that *"subsidies on inputs are more easily dissipated to the non-target population"*. Therefore, input subsidies such as fertilizer, electricity, and diesel are dismissed as stated above. Even on food subsidy, *"targeting remains poor, and leakages are extensive"* (Government of India, DEA, 1992, p.2). It also states that, besides leakages, *"poor design of a subsidy regime tends to make it difficult to ensure equity objectives"* (Government of India, DEA, 1997, p.2). As an example, the paper states that *"A significant proportion of subsidies in higher education is probably appropriated by the middle to high income groups"* (Government of India, DEA, 1997, p.2).

**Chairperson, University Grants Commission, New Delhi-110 002.*

The third assumption is that *"Untargeted subsidies promote inefficiency and induce a wastage of scarce resources"* e.g. *"low recovery rates of electricity, diesel, irrigation water, lead to their wasteful use"* (Government of India, DEA, 1997, p. 2).

Very interestingly, areas where subsidies are very high and tangible benefits not always evident, and where leakages, inefficiencies and the wastage of public resources are known to be high, such as law and order and general administration, it is claimed by the paper that these are "public goods" and kept outside the estimates of subsidies. The reasons given are that :

(a) consumption of the good by one person does not exclude anyone else from enjoying the benefits of the service, and

(b) any one person's consumption of the service does not materially affect consumption of the same by others.

Hence, the paper divides services provided by the government into three broad categories : *public goods*, like defence and general administration which cannot be priced, *merit goods or services* which include primary education, public health, social welfare schemes, sanitation, and *non-merit goods or services* which include *"education beyond elementary level"* (Government of India, DEA, 1997, p.6). The reason given is that *"Here, benefits of subsidies accrue primarily to the recipients. In contrast, benefits of providing elementary education spread well beyond the immediate recipients"* (Government of India, DEA, 1997, p.6).

World Bank Reports

To be able to understand this recent Government of India document, we need to examine two documents of the World Bank—*Higher Education : The Lessons of Experience, 1994, and Priorities and Strategies for Education : A World Bank Review, 1995.* Many assumptions and issues raised therein need to be questioned and analysed as these have had far reaching effects on the governments of many developing countries, especially those which have undertaken severe measures to restructure their economies.

The arguments posed by the Government of India are to be seen in the perspective of the above mentioned World Bank document which states as follows : *"Indeed it is arguable that higher education should not have the highest priority claim on incremental public resources available for education in many developing countries, especially those that have not yet achieved adequate access, equity and quality at the primary and secondary levels. This is because of the priority that countries attach to achieving universal literacy; because the social rates of return on investments in primary and secondary education usually exceed the returns on higher education; and because investments in basic education can also improve equity because they tend to reduce inequalities"* (World Bank, 1994, p.3).

The issues which confront us in the above statement lead us to examine whether the assumptions are correct because, if assumptions are false, the whole argument becomes questionable. It deeply concerns us that higher education is being shown as having lower social rates of return than primary education, because it is seen as private gain without adequate concomitant social benefits. Paradoxically, the Executive Summary of the World Bank document on *"Higher Education"* begins by stating: *"Higher education is of paramount importance for economic and social development. Institutions of higher education have the main responsibility for equipping individuals with the advanced knowledge and skills required for positions of responsibility in government, business and the professions. These institutions produce new knowledge through research, serve as conduits for the transfer, adaptation and dissemination of knowledge generated elsewhere in the world, and support government and business with advice and consultancy services..... The development of higher education is correlated with economic development: enrolment ratios in higher education average 51 per cent in countries that belong to the Organisation of Economic Cooperationa nd Development (OECD), compared with 21 per cent in middle-income countries and 6 per cent in low income countries. Estimated social rates of return of 10 per cent or more in many developing countries also indicate that investments in higher education contributed to increase in labour productivity and to higher long-term economic growth, which are essentual for poverty alleviation"* (World Bank, 1994, p.1).

With only 6 per cent of enrolment in higher education, of the relevant age group, the Government of India Discussion Paper suggests raising fees so as to lower these enrolments further, which could have the likely effect of excluding India from all the acknowledged benefits of higher education described by the World Bank above. Moreover, the gap between the OECD countries, with 51 per cent enrolment, and 6 per cent in India, is already huge. While, in India, sheer numbers may be large, the issue is not a numerical one but of the proportion of the educated in the population. Hence, any curtailment will further limit our ability to hold our own in the global competition which requires skills of an order much beyond school education.

The classification of higher education with non-merit goods and services, possibly emanates from the nature of the assumptions made by the World Bank. In the first place, it is correct that higher education, by its very nature, requires higher per head expenditure. However, it is also true that very few countries have achieved cost-sharing in education as a whole. In countries of the OECD, public sources of funding in 1991, were as high as 99 per cent in Denmark, 98 per cent in Netherlands, 93 per cent in Ireland, 90 per cent in Canada, 85 per cent in Australia and 78.6 per cent in the USA. Among low and middle income countries, it is 89 per cent in India, 62.8 per cent in Indonesia and 62.2 per cent in Kenya (World Bank, 1995, p.54). Hence, in fact, it is the low and middle income countries which have lower public outlays on education. Most countries are only now looking at the cost of education and the need to increase cost sharing with the users, especially in higher education.

The first assumption of the World Bank relates to the benefits accruing to society from public investments in higher education versus primary education. The presumption is that the rate of return to the individual in higher education is much greater than in primary education, whereas, the rate of return to the society is greater in primary education compared to higher education. The calculation is based on the fact that the cost of education includes the private as also the public outlay and, *"since in western countries education is heavily subsidized, the social cost is much higher than the private cost. Hence a social rate of return is typically less than the corresponding private rate of return"* (World Bank, 1995, p.21). The rate of return to a graduate is higher (through salaries earned) than to a school leaver. Besides fees, there are other educational expenditure for the invidual plus the cost of postponing earnings (opportunity costs). Hence, the individual has to weigh the advantages and disadvantages of the choice he/she makes. However, the actual investment, which the student will make, will be much less than the earnings over a period of his/her life-time. Hence, investment in higher education would be much less than the eventual earnings of the person.

The World Bank document points out that : *"Education contributed to economic growth both through the increased individual productivity brought about by the acquisition of skills and attitudes and through the accumulation of knowledge. The contribution of education can be estimated by its impact on productivity, measured by comparing the difference in earnings over time of individuals with and without a particular course of education and cost to the economy of producing that education. This measure is known as the social rate of return to investment in education, although it does not capture all social benefits or all external effects"* (World Bank, 1995, p.21).

The document further states that : *"Rates of return on education are very high in low and middle income countries. Country circumstances differ, but, in general, in economies with less than universal basic education, rates of return are the greatest for primary education, followed by secondary and then higher education"* (World Bank, 1995, p.21). On the other hand, the document makes an observation that *"economies with universal primary education that have undergone rapid growth tend to show a higher rate of return to secondary than to primary education"*.

The general example given is that of East Asian economies of Korea, Malaysia, Indonesia, which invested more in primary and secondary education. Whether such economies, with small populations, can be held as examples is doubtful, and especially because their economies grew at a time when technology was not affected by either global competition or the various global agreements of the recent past, which have negative effects on the developing economies.

We agree that lower levels of education provide some skills to the rural poor, and have social impact such as reduced fertility and improved health. However, the skills at that level of education do not equip persons necessarily to move above the poverty level as it is seen in India for those with just a primary level of education. At least a middle school level is necessary to achieve greater social benefits. Moreover, education by itself does not lead to poverty alleviation unless concomitant economic changes are also taking place.

On the other hand, the World Bank contradicts its own stand in the document on *"Higher Education"* where it is stated that : *"Higher education investments are important for economic growth. They increase individuals' productivity and incomes, as indicated by rate-of-return analysis, and they also produce significant external benefits not captured by such analysis, such as the long-term returns to basic research and to technology development and transfer. Economic growth is a critical prerequisite for sustained poverty reduction in developing countries, which is the overarching objective of the World Bank"* (World Bank, 1994, p.12).

Moreover, its subsequent document on *"Perspective and Strategies for Education"*, states that : *"Higher* *education also contributed to self-sustaining growth through the impact of graduates on the spread of knowledge* (Becker 1964). *Institutions of higher education have the main responsibility for equipping individuals with the advanced knowledge and skills required for positions of responsibility in Government, business and professions. These institutions produce new scientific and technical knowledge through research and advanced training and serve as conduits for the transfer, adoption, and dissemination of knowledge generated elsewhere in the world. Estimated social rates of return of 10 per cent or more in many low and middle-income countries indicate that investments in higher education contribute to increase in labour productivity and to higher long-term growth"* (World Bank, 1994).

"Not all of the external effects of higher education—such as the benefits from basic research and from technology development and transfer—are fully reflected in the earnings used in calculating those rates of return. The returns to higher education, as to basic education, are thus greater than those measured using earnings, and it is very possible that the contribution of higher education to growth may increase with levels of technology and as countries achieve universal primary and secondary education" (World Bank, 1995).

In fact, the document acknowledges that : *"In almost all countries, rates of return to investment in all levels of education exceed the long-run opportunity cost of capital (usually estimated at 8-10 per cent in real terms), making education an excellent investment"* (World Bank, 1995, p.22).

It further acknowledges that : *"The improvement in the position of the more educated in advanced countries, even though their numbers increased, suggests that the demand for more educated workers has increased over time, causing an increase in the earnings premium associated with more schooling"* (World Bank, 1994, p.25).

It is also a fact that recent technological advances have led to a greater demand for more educated workers, with greater wage increases. This has led to income inequality but the remedy is not depressing higher education but increasing opportunities to move from primary to secondary schools to higher secondary for entrance into higher education to enhance greater opportunities to enter into the economy where earnings are likely to be higher. Promoting equity does not mean depressing populations to lower levels but, rather, opening up education and the economy to progressively larger populations.

The statements from the World Bank make it amply clear that, in fact, primary, secondary and higher education play complementary roles in national development. In today's world, we cannot accept the World Bank's remedy, at least in our specific Indian context, of serialising or phasing the development of the education sector. Unlike the East Asian countries, India has already heavily invested in the higher education sector and, in fact, provides opportunity for students from Africa and East Asia, especially Malaysia, and some middle eastern countries, to study in India. The developing countries cannot wait. They have to leap frog into today's competitive world or stay marginalised. Moreover, to believe that higher education has greater rates of individual returns than social rates of returns, is to forget that the country has not only many achievements to its credit due to a critical number of educated, but its technological, professional, business, industry, civil and defence services, are drawn from it. To classify higher education as a non-merit service, while excluding general administration as a public service from merit/non-merit services, when it has both inefficiency and leakage built into it, is amazing, not to speak of the lack of quality in service delivery—all the factors which the World Bank espouses as necessary to performance.

The Indian Context

In countries like India, targeting services so that they reach the appropriate beneficiaries, cannot be gainsaid. However, in a country where a sizeable proportion of students in higher education are drawn from the social sectors which suffer from social and economic handicaps, that is, the scheduled castes and tribes, some of the backward castes, and rural youth who join the colleges located in district and taluka towns, to think that only the affluent benefit from higher education is to lose sight of the fact of our socio-economic fabric. In fact, every university needs to do a study of the socio-economic profile of its students in the undergraduate and postgraduate programmes to identify the extent to which students in higher education are drawn from the disadvantaged groups, and many of them first generation entrants. If India boasts of a large middle class today, possibly as large as the whole population of Europe, it has been made possible by the gradual spread of higher education. Given the opportunities created for professional development and general education, Indians found a means to capture the potential in India's economic development after independence. In spite of it, as pointed out earlier, the enrolment of the relevant age group in the population is barely 6 per cent when the USA has reached 51 per cent. Not finding a niche in our own country, in its better universities and other institutions, students are finding that they have to go abroad to seek education. It will be a sad day for our country if our students had to pay much more to seek education elsewhere for want of opportunities closer to home, when India was one of the few British colonies to have higher education sector established even prior to independence.

Our enrolment has been steadily rising, though at a modest rate of only 5.5 per cent, compared to even ten per cent in some of the developing countries. We cannot have productivity with low level skills of primary education. India will have to give serious thought to developing its education sector more holistically. It can do so only if it has the will to shift its investments from other sectors capable of attracting private investments and not underwriting costs for the affluent sections of the country by better targeting, which it advocates. For instance, it does not need to make investments in civil aviation, which is a sector far more clearly used by the affluent than the education sector, or on telephones, or on building major roads where costs are recoverable through tolls, and many such other "sacred cows" of the public sector. In fact, roads and bridges have been put in merit goods in the Government of India document. It is worth mentioning that the first bridge built between the new and old Mumbai fully paid for itself through tolls within a few years, and new parallel bridges are coming up in a similar manner to accommodate the increase in traffic. Every Ministry provides scope in its budget for expansion. On the other hand, not only does education suffer from low investments, the pressures for expansion through increase in enrolment are not acknowledged, while in the Government Discussion Paper, it is even sought to be discouraged through the mechanism of higher fees in spite of our low levels of 6 per cent enrolment and 5.5 per cent annual increases.

Leakage is the greatest problem in the Government of India schemes for poverty alleviation as funds are siphoned off by the more powerful advantaged groups, including political and bureaucratic power structures in both rural and urban India. Higher education has, probably, a low record of leakage particularly because, in many universities and colleges, the salaries go directly into the teacher's bank account. Since salaries range around 85 per cent of the budget, there is very little scope for whatever is left to be siphoned off, most of it going into various statutory liabilities, maintenance, and committed expenditures.

The *Punnayya Committee Report (University Grants Commission, 1993)* has stated that a the government cannot give up its responsibility to the higher education sector. It states : *"The State must continue to accept the major responsibility for funding the essential maintenance and development requirements of the universities" and "Although primary education is fundamental to the nation, higher education determines its entire development including academic and technological progress. While it is mandatory that nation achieves universal elementary education and total literacy, at the same time, we cannot afford to neglect and relegate to a neglected position our quest to achieve global standards of higher education."*

However, the *Punnayya Committee Report* has also laid an expectation that the universities will increase their earnings, within a lead period of 10 years, to about 25 per cent. The report became a public document in 1993. It is necessary to assess what the universities have done in the four years since the Report was circulated and how seriously they have been addressing the need to meet costs at least partially. It should be possible to expect a contribution of 15 per cent of the cost of education from the students through fees, at least among those who can afford the cost of their education, and other 10 per cent could be generated by the university through other internal sources, rationalisation of expenditure, and from external sources. Our mind-set about what higher education should cost the individual, needs to change. Students should pay for the cost of their hostel accommodation and electricity, so that, hostels can become self-sufficient. Today, in some universities, students pay hostel fees lower than the more disadvantaged slum dwellers. The food the student eats should be fully paid for by him/her besides contributing to overheads such as, at least, partially meeting the salaries of the mess staff. Even in the USA, fees are only 25 per cent of the expenditure in public higher education institutions. In China, it is less than 10 per cent, and in Japan less than 5 per cent. (World Bank, 1994, p.42). Hence, the Indian scene is not too atypical as we are sometimes led to believe. Moreover, even in the USA, enrolment in private institutions is only to the extent of 25 per cent (World Bank, 1994, p.35).

In fact, as such costs of education go up, we need to apply our minds to the way students in need can get a subsidy. In the Australian system, there is a concept of deferred payment, which means that the student starts paying back only when the income from earnings, on graduation, reach the national income average and the payment is done through the tax system. However, a student who pays fully during the period of education, can be given a rebate. This system does favour the advantaged affluent sections since only they could pay the full fees resulting in inequities. The best system would be to link our repayment to the tax system, regardless of whether we pay income tax or not, and repay over one's life-time. It would certainly broaden our financial base in education.

The World Bank document on *'Higher Education'* espouses loans but shows the poor recovery rate. It states : *"Experience to date with existing loan schemes in about fifty industrial and developing countries has been disappointing. Because of heavily subsidized interest rates, higher default rates, and high administrative costs, the financial performance of loan schemes has been unsatisfactory. But the experience of Colombia and the Canadian province of Quebec, for example, show that it is possible to design and administer financially sustainable programmes"* (World Bank, 1994).

One swallow does not make a summer and such micro-level programmes have little applicability in a country of the size of India and a student population in higher education alone which is larger than some nation states in the World (1.6 million).

In our Ninth Plan, we have spoken of the need for reconciling the issue of expanding access but maintaining quality as also the issue of access and equity in respect of the disadvantaged such as women, the differently abled, the socially handicapped, and the minorities. Targeting these are in the interest of the nation as human resource is the major wealth of this country. The World Bank policy in higher education also lays such emphasis but, in doing so, it cannot afford to use "merit" as a criterion as merit students generally come from the affluent sections having attended the better quality institutions at the lower levels of education. Where a vast majority attend government schools of poor quality, the higher education system will have to provide remedial courses at the entry level of undergraduate education to students if it is to upgrade quality. Our Ninth Plan has laid emphasis on it as well as the need to target the backward area colleges.

Hence, our approach has to be more judicious. We need to challenge students who come with better preparation while helping those who come with poor preparation to cope better with their course work. We need to raise fees to at least reasonable levels which reflect current costs of education. At the same time, the country will have to find an answer to subsidise those who come from the less advantaged section, as higher education leads to upward social mobility and decrease in poverty. If global challenges are to be met, we will need more of higher education and not less, and we will need to make such education relevant as also qualitative to respond to this challenge. Our emphasis on educational costs as investments have to be matched by greater levels of efficiency in fund management and raising of resources while curtailing expenditure which does not impact directly on the central tasks of teaching, research, extension and field action. Effectiveness and efficiency must become our by-words. We have responsibility for the trust reposed in us through public funds. We need to find ways to respond to the critical view of higher education by the public at large, and to develop its capacities for providing education which impacts on national development and initiates change. Only as the social value of higher education is demonstrated, will it attract greater funding from the public as merit services.

Conclusion

The time has come when we can no longer be complacent. With the possible effects of documents like the Government Discussion Paper, which highlights the thinking of our policy makers, not only the system of higher education is under fire but the future progress of this nation is at stake. We should be concerned about relevance, quality, access and equity, and better management through efficiency and effective strategies. Unless we review our cost structure and take bold initiatives where required but, at the same time, demand public investment in appropriate proportion, we could betray the very cause to which we have committed most of our life.

[Inaugural Address at the AIU-UGC Roundtable for Vice Chancellors on "University Management". Devi Ahilya Vishwavidyalaya, Indore, 2nd June, 1997].

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Government Support for Higher Education

K.B. Powar*

Introduction

Following a commitment made by the Finance Minister, in his budget speech for 1996-97, the Department of Economic Affairs, Ministry of Finance, Government of India, issued in May 1997, a discussion paper on *'Government Subsidies in India'* (Govt. of India, 1997a). The paper brought out the fact that in 1994-95 the subsidy for services provided by the Central and State governments constituted 14.4% of the GDP. Emphasising the need for reducing the overall scale of subsidies by about 50% it made a distinction between 'merit' and 'non-merit' subsidies based on the 'externalities' associated with the goods/services. Education, other than elementary education and agricultural education, has been classified as a non-merit service. The discussions that followed the issue of the paper have highlighted the differences in perception between economists and educationists regarding the extent of governmental support to be given to higher education.

The Discussion Paper

While admitting that subsidies can be a powerful welfare augmenting instrument of fiscal policy, the discussion paper of the Finance Ministry suggests that subsidies are normally to be advocated when the social benefits of a particular service or commodity are greater than the sum of the private benefits of the consumers. The paper makes a distinction between subsidy for 'merit' services, in which there is a significant gap between the private valuations of the benefits of services and their true social value, and 'non-merit' services for which there is no significant difference between private and social valuations. The paper considers primary (elementary) education and higher education to be respective examples of these two types of services. According to the paper primary education is a 'merit-service' because its benefits *"spread well beyond the immediate recipients"* while education beyond the elementary level is a 'non-merit service' because the *"benefits of subsidies accrue primarily to the recipients"*.

According to the discussion paper 'non-merit' subsidies amounted to 10.7% of the GDP at market rates, in 1994-95, while the average all-India recovery rate for these non-merit goods/services was just 10.3%. In the case of education as a whole the recovery rate was less than 1% and even for higher education (university sector) it was only 1.25%. In the same year the combined fiscal deficit of the Centre, States and Union Territories was placed at 7.3% of the GDP. Any reduction in the quantum of non-merit subsidies would have a direct and immediate effect on the fiscal deficit. By increasing the relevant user charge it would be possible to have a more than proportionate increase in cost recovery due to two distinct effects, viz., (i) increase in user prices and (ii) reduction in quantity demanded. The paper states that in 1996-97 the fiscal deficit of the Centre and States and Union Territories combined was 6.5%. A reduction of the subsidy rate by 50% could shrink this deficit to less than 2% of GDP.

The paper states : *"Most subsidies to higher education accrue predominantly to the better-off sections of society as they have an overwhelming advantage in competing out prospective candidates from the other sections in getting admission to courses that are characterised by scarcity of seats"*. In a more specific statement the paper says *"A significant portion of subsidies in higher education is appropriated by the middle to high income groups, because shortages of seats in this sector are cleared by quality-based clearing in the shape of entrance examination, interview, group discussion etc, where the poorer sections of society are easily competed out"*.

The paper concludes that reforms in our present regime of subsidies should focus on, amongst other things, the reduction of overall scale of subsidies and making them as transparent as possible. Further, that it *"may not be unreasonable to set a target of reducing subsidy rate for non-merit subsidies from 90% to 50% in three years, with a further goal of reducing it to 25% in another two years"*.

The paper assumes many things. *First,* that the benefits of higher education accrue primarily to recipients (and that society-at-large does not benefit substantially). *Second,* that a reduction in the number of recipients would not be harmful to the nation's interests. *Third,* that a substantial increase in user prices is possible. *Fourth,* that the beneficiaries of higher education are predominantly from the middle and higher classes. *Fifth,* that the middle class, including the higher salaried class, will be able to afford unsubsidised or nominally subsidised, professional education. These assumptions are to an extent

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simplistic. Their validity is discussed in later sections of this paper.

There is apprehension in some circles that the views of the Ministry of Finance regarding higher education, as expressed in the discussion paper, are based upon the thinking of the World Bank and its specialists. Tunnermann (1966) writes *"Amongst the specialists of World Bank who started the criticism of higher eduction was George Psacharopolous, who in several articles stated that resources devoted to higher education were not used efficiently, and, therefore, investments on education must prioritise primary school — where a return/social rate is higher than that correspondig to higher education. As (a) consequence, the policy on higher education must be focused on cost recovery, by means of suppression of gratuity, on the establishment of education credit and greater support to private higher education"*.

The arguments of the Finance Ministry are in many ways similar to those presented in the World Bank document *'Higher Education : The Lessons of Experience' (1994)*. The latter states : *"Indeed it is arguable that higher education should not have the highest priority claim on incremental public resources available for eduction in many developing countries, especially those that have not yet achieved adequate access, equity and quality at the primary and secondary levels. This is ..... because the social rates of return on investments in primary and secondary education usually exceed the returns on higher education ...."* (World Bank, 1994, p. 3).

Tunnermann (*op. cit.*) points out that this World Bank document has been the subject of strong criticism from academics, analysts and international officials. He summarises some of the criticism as follows .

- *"A core problem is that conventional estimations on the return rates do not equate the social benefits of eduction at any of the levels. This opens the debate to the existence of those benefits in higher education, in functions covering not only teaching activities, but also research and the strengthening of the national identity (nation building).*
- *The social return rates do not take into consideration the non-private benefits of education emerging from 'positive external factors'. The latter are higher in the case of higher education than for other educational levels, which might put in doubt the legitimacy of a redistribution of the public expenditure allocation in education to the detriment of higher education.*
- *The aspects relating to the strengthening of cultural identity developed at the universities are not easily quantifiable. They are public goods".*

Additionally, there is a need to analyse whether the views of the World Bank, formulated in the context of the smaller developing countries, are relevant to India, a country with a population nearing a billion, having a large industrial infrastructure, the second largest science and technology manpower and the second largest higher eduction system in the world. Further, it is imperative that we take cognisance of the fact that the neglect of the higher education system will make the country vulnerable to inroads from universities from western countries, leading to a stage when we will become dependent upon them for the fulfilment of our manpower requirements in key sectors.

The Role of Higher Education in National Development

The *first assumption*, made in the discussion paper, that the benefits of higher education accrue primarily to the recipient, and by implication, that the benefit to the nation is not much, suggests a lack of appreciation of the role of higher education in national development In fact there is universal appreciation of the fact that higher education provides the competencies that are required in different spheres of human activity ranging from administration to agriculture, business, industry, health, communication, and extending to the arts and culture. In fact the World Bank document referred to in the previous section itself states : *"Higher education is of paramount importance for economic and social development. Institutions for higher education have the main responsibility for equipping individuals with the advanced knowledge and skills required for positions of responsibility in government, business and the professions... ... Estimated social rates of return of 10 per cent or more in many developing countries also indicate that investments in higher education contribute to increases in labour productivity and to higher long-term economic growth, which are essential for poverty alleviation"* (World Bank, 1994, p. 1). It goes on to add : *"Higher education investments are important for economic growth. They increase individual's productivity and incomes, as indicated by rate-of-return analysis, and they also produce significant external benefits not captured by such analysis, such as long term returns to basic research and to technology development and transfer"* (World Bank, 1994, p. 12). In a follow-up document, *'Perspectives and Strategies for Education'*, the World Bank concludes *"Higher education also contributes to self-sustaining growth through the impact of graduates on the spread of knowledge"* (World Bank, 1995). More importantly this second World Bank document admits that *"Not all the external effects of higher education — such as the* *benefits from basic research and from technology development and transfer — are fully reflected in the earnings used in calculating those rates of return".*

UNESCO in a policy paper *'Document of Policies for the Change and Development of Higher Education'* (UNESCO, 1995) maintains that there is a well established correlation between investment in higher education and the level of social, economic and cultural development of a country. It expresses concern over the observed trend towards a reduction in State contribution for higher education and its reallocation to earlier educational levels. It maintains *"State and society must perceive higher education not as a burden on federal budgets but as a long term domestic investment, in order to increase economic competitiveness, cultural development and social cohesion... As a conclusion one could say that the public support to higher education is still essential in order to ensure its educational, social and institutional mission"* (UNESCO, 1995, para 71).

Access to Higher Education

India has the second largest higher education system comprising 237 universities, nearly 9000 colleges, and about 5.5 million students. In absolute terms five and a half million students appears to be a very high number and is possibly the basis for the *second assumption* that a decrease in the number of students would not harm the nation's interest, or even that it is desirable. However, it is necessary to keep in view the fact that this number (5.5 million) represents only 6% of Indian people in the age group 18-23 years. The percentage is extremely low compared to 51% in the countries that belong to the Organisation of Economic Cooperation and Development (OECD), and 21% in the middle-income group countries, and the same as that for the low-income group countries (For details see Table 1). What we require is an increase in the number of students in higher education so that our requirements of manpower are met. Any curtailment can only have disastrous consequences. As the UNESCO document (*op. cit.*) points out *"Access to higher education, and the broad range of services it can render to society, is part and parcel of any sustainable development programme in which high-level human expertise and professional skills are required"* (UNESCO, 1995), para 41).

Significantly, today it is the developed nations that attach the greatest importance to all levels of education, including higher education. Dhanarajan (1998) quotes two examples to illustrate this. In the United Kingdom, the country that gave birth to Thatcherism, the present British Prime Minister Tony Blair stated in a lecture delivered at Ruskin College that *"... three priorities for (his) government (should his party come to power) would be education, education and education"*. Likewise, American President Bill Clinton, in his second Inaugural Address, called for *"a new land (in which) education will be every citizen's most prized possession... And the doors of higher education will be open for all"*. These are sentiments echoed by our

Table 1 : Gross enrolment ratios in higher education in selected developed and developing countries (%)

Country	*Year*	*Ratio*
Developed Countries		
Canada	1992	98.8
U.S.A.	1991	76.2
Finland	1992	57.0
New Zealand	1992	49.7
Norway	1992	49.3
France	1992	45.6
Australia	1992	39.6
Spain	1991	39.5
Netherlands	1991	38.8
Germany (F.R.)	1990	37.6
Belgium	1990	37.6
Denmark	1991	37.6
Austria	1992	36.5
Sweden	1991	33.8
Italy	1992	33.7
Germany (D.R.)	1989	33.3
Japan	1991	31.5
Switzerland	1992	30.7
Bulgaria	1992	30.0
Iceland	1991	29.2
U.K.	1990	27.8
Portugal	1991	23.4
Poland	1992	23.0
Hong Kong	1992	19.6
Developing Countries		
Asia		
South Korea	1993	46.4
Philippines	1991	27.8
Thailand	1992	19.0
Indonesia	1992	10.1
Malaysia	1990	7.3
India	1989	6.0
Sri Lanka	1991	5.5
Bangladesh	1990	3.2
Pakistan	1989	2.8
China	1991	1.6
Africa		
Botswana	1992	5.2
Nigeria	1989	3.7
Kenya	1990	2.2
Ghana	1990	1.5
Latin America		
Mexico	1992	14.0
Columbia	1991	14.8
Brazil	1991	11.7

Source : UNESCO : *Statistical Yearbook, 1994, Paris.*

leaders, politicians, administrators, social workers, and educationists, when they make impassioned pleas for ensuring access and equity in higher education.

Increase in 'User Charge'

The discussion paper suggests that a reduction in subsidy could be achieved through an increase in user charge, which in the case of education would mean an increase in the tuition fees charged to the students. This leads, by implication, to the *third assumption* that a substantial increase in user charge is possible; for the envisaged scale of reduction is 40% in the first three years, and a further 25% in the next two years. Admittedly, tuition fees in higher education establishments are extremely low and there is a need for rationalisation. However, the point to be considered is whether a sharp increase in fees is possible, and even if this was done, would it generate any significant amount. Before considering these aspects it would perhaps be useful to review the international situation regarding tuition fees.

At the international level there is great variation in perception regarding tuition fees to be charged from recipients of higher education, and in the amount of fees, as per cent of unit cost, actually charged. At one end of the spectrum are countries like the United States where the fees charged are substantial (with full fees being sometimes charged) while at the other end are countries like France and Germany where higher education is free of cost, for all who deserve it, and where the idea of introducing fees has generated strong protests from students. Education fees, as a percentage of operating expenditure, prevailing in different countries of the world are given in Table 2. It is seen that in a large number of developing countries no fees are (were being) charged, and even in the United States the fees are only 15%. Raising the fees to 75% of unit cost, in five years, is not in keeping with international thinking, nor does it seem possible in the political climate that exists in this country.

Table 2 : Higher education fees as a percentage of unit operating expenditure

Country	*Per cent*	*Year*
Central & South America		
Argentina	No fees	1990
Barbados	15	1991
Bolivia	3	1991
Brazil	No fees	1991
Chile	26	1991
Colombia	4	1988
Costa Rica	16	1991
Ecuador	2	1980
Guatemala	2	1991
Honduras	3	1991
Jamaica	25	1991
Mexico	No fees	1991
Peru	No fees	1991
Venezuela	No fees	1991
Asia		
Bangladesh	No fees	Mid 1980s
China	9	1991
India	5	Mid 1980s
Indonesia	25	1989
Malaysia	6	Mid 1980s
Nepal	10	Mid 1980s
Pakistan	4	1990
Papua New Guinea	No fees	Mid 1980s
Philippines	15	Mid 1980s
South Korea	23	Mid 1980s
Sri Lanka	3	Mid 1980s
Thailand	5	Mid 1980s
Vietnam	23	1991
Middle East, North Africa		
Algeria	No fees	1990
Egypt	4	1990
Guinea	No fees	1990
Israel	20	1991
Morocco	No fees	1990
Senegal	No fees	1990
Sudan	No fees	1987
Sub-Saharan Africa		
Benin	No fees	1991
Ghana	No fees	1990
Kenya	12	1991
Madagascar	No fees	1990
Malawi	No fees	1990
Niger	No fees	1990
Nigeria	No fees	1990
Uganda	No fees	1991
Industrial Countries		
France	1	1990
Hungary	2	1990
Japan	9	1991
Spain	20	1988
UK	No fees	1990
USA	15	1985

Source · Ziderman and Albrecht (1995), Table 3.4, p. 43.

Fischer (1990) while discussing increase of tuition fees in the United States noted that there are *"political difficulties on raising tuitions, even when raises are accompanied by increased need-based aid. Opposition will come from across the political spectrum, even from those who view the low-tuition for all approach as the surest way to secure subsidies for poor students. It may be too much politically to expect states to pursue alternatives that require large tuition increases (p. 52).* If a 'capitalist' country like the United States shows hesitancy in raising tuition fees one may only imagine the results in India, known to lack political will in such matters. One has to bear in mind that governments have not favoured fee-increase and even the central government had advised the IITs not to implement the fee-rise proposed a couple of years back.

The only state that has made serious attempts to raise fees in non-professional institutions of higher education is Maharashtra. And even in this state there has been some hesitancy in the implementation of recommendations made by the committees constituted by it. The *Bhanage Committee*, appointed by the State government, in September 1978, in its report submitted in 1979, distinguished between 'user benefits' and 'societal benefits', and recommended the fixation of fees in relation to the cost of education. It further recommended that two-thirds (66.7%) of the cost of education be recovered from the students. It took note of the fact that 50% of the total number of students, including 78.5% of students in rural areas, do not have to pay fees. It further suggested that the fees be reviewed every five years as a matter of principle. The government, however, felt that the suggested formula could cause hardships and fixed the fees at Rs. 400/-, i.e. 40% of the cost of education. Nearly a decade later, in 1988, it appointed the *Powar Committee* to again examine the matter and suggest the fees for programmes in the faculties of Arts (including Social Sciences), Science, Commerce and Education. The Committee in its report submitted the same year (Govt. of Maharashtra, 1988), noted that most young people proceed for higher education only because they are unable to find any kind of employment. It recommended that the fees be fixed at 30% of the cost of education. Thus implied raising the fees from Rs. 400 to Rs. 800 annually for undergraduate classes, and from Rs. 600 to Rs. 1000 for postgraduate classes. Noting that such a large increase could not be implemented in one stage the Committee suggested that as a matter of practice the fees be increased by Rs. 100 every year till the amount of 30% of expenditure was reached, and thereafter the fees be increased regularly. The government did not take any action on the report till 1992 (because of lack of political will?) when it decided to raise the fees, in one stage, to the amount recommended. Subsequent agitation by the students made the government reduce the fee enhancement by 50%, but the student organisations did agree to periodic fee increase commensurate with the increase in expenses. However, the government has not thought it appropriate to raise the fees after that. So much for political will.

It may also be pointed out that even periodic increases in fees will not generate any substantial income as a very large number of students receive freeships and scholarships. For example the *Powar Committee Report* points out that, during 1987-88, in the Marathwada University, 95% of undergraduate students in the Arts faculty, 72% in the Science faculty, and 91% in Commerce faculty had their fees reimbursed. The corresponding figures for the University of Bombay, spread over a relatively rich area, were 33% for Arts faculty, 33% for Science faculty and 14% for Commerce faculty. Overall about 60% of undergraduate students in Maharashtra universities enjoyed fee concessions. At the postgraduate level the number was larger, i.e., 71%.

The Beneficiaries of Higher Education

The *fourth assumption* made in the discussion paper is that the beneficiaries of higher education are predominantly students from the middle and upper classes. This may be true for the professional courses, like those of medicine, engineering and management, but not for higher education as a whole. And it must be emphasised that 88% of the students are in the liberal arts programmes, namely, in the arts, social sciences, science and commerce faculties. Moreover, it is a fact that a very large number of students in our mofussil universities are first generation learners. They would never have got an opportunity to enter the portals of a university had it not been for government support to higher education. The data relating to students receiving financial assistance, given in the previous paragraph, clearly show that an appreciable number of students from the less privileged classes are availing of higher education facilities.

In this context it may be pointed out that *the National Policy on Education, 1986* (Govt. of India, 1986) envisages education to be :

- a process of empowerment through the development of knowledge, skills and values (Education for Development), and
- an instrument of social change which is to be promoted by providing opportunities for upward economic and social mobility (Education for Equality).

In keeping with this policy efforts have to be made to provide special opportunities to the traditionally underprivileged sections of society, including women, the scheduled castes, the scheduled tribes, other backward classes, and people from the socially backward areas. The results have been encouraging. In the fifty years since independence the ratio between male and female students has dropped from 8.29:1 to 1.69:1. Since 1957 the ratio between general and SC/ST students in professional education has dropped from 11.61:1 to 8.71:1. In the same period the ratio between general and SC/ST students in general higher education has, however, increased marginally from 6.27:1 to 7.16:1. (Power, 1997). In absolute terms the increase, since 1957, in the number of SC/ST students in both general and professional education has been considerable. In the former category it has increased from about 91,000 to about 6,10,000 and in the latter from nearly 16,000 to over 56,000. It has again to be stressed that this progress has been possible because of government support. Lowering of financial support can only result in slowing down of the movement towards equality.

Affording Higher Education

The *fifth assumption* made in the discussion paper is that the middle class, including most of the salaried class, can pay for unsubsidised higher education. This is difficult, especially in case of quality professional education. The cost of medical education in a self-financing medical college, not receiving any government subsidy, and having a private hospital was estimated by Christo (1996) to be about Rs. 2.25 lakh. After implementation of new scales, and with the normal cost escalation, it would be about Rs. 2.75 lakh now. The average cost of medical education at the Manipal Academy of Higher Education, for the years 1993-94 to 1996-97, has been estimated at about Rs. 160 thousand for the M.B.B.S. programme, about Rs. 120 thousand for the postgraduate degrees and diplomas, about Rs. 82 thousand for dental undergraduate degree, and about Rs. 18 thousand for the undergraduate nursing degree (Manipal Academy of Higher Education, 1996). Technical education is equally costly. The average annual cost for an engineering degree, for the period 1991-92 to 1994-95, at the University of Roorkee has been estimated at Rs. 241 thousand, and at IIT, Kanpur at Rs. 399 thousand (Ray, 1997). The Institutional Unit Cost for Master's programmes, for the year 1993-94, was about Rs. 23 thousand for Delhi University, Delhi, about Rs. 39 thousand for Pondicherry University, Pondicherry, about 34 thousand for Kurukshetra University, Kurukshetra and about Rs. 20 thousand for Shivaji University, Kolhapur (Association of Indian Universities, 1995). Paying 50% of the cost for general education, at the Masters level, would be difficult for many middle class families; and professional education would be impossible even for children of the highest paid government personnel. The country cannot allow this to happen. It is evident that government will have to continue to shoulder the major share of responsibility of financing higher education.

Funding Pattern

A global review clearly shows that in most countries of the world education is almost exclusively financed by the government. In countries of the OECD public source of funding was, in 1991, as high as 99% in Denmark, 98% in The Netherlands and 90% in Canada. Even in the United States it was as high as 78%. In India it was 89%, in Indonesia 62.8% and in Kenya 62.2% (World Bank, 1995). Cost sharing between government and beneficiaries is a relatively new suggestion, and has not really been put into practice. Tilak (1997) points out that in most societies government is the most important financier of (higher) education. According to the data given by him in the last decade state finances for the higher education sector in the OECD countries were high. It was 88% in Australia (1988); 89.5% in France (1984), 68.5% in Germany (1986), and 90% in Norway (1987). The contribution was relatively lower in the United States (59.3%) and the United Kingdom (55%). Tilak (*op. cit.*) believes that government financing *"is held not only to be necessary for the development of education, but also as a desirable form of providing education, because markets cannot provide the socially optimum quantities and qualities of education, as markets do not capture externalities"*.

In most countries there has been a rethinking on the role of government in financing higher education following the transition of education systems from elite systems to mass systems. Ziderman and Albrecht (1995) point out that as long as education was reserved for elite groups governments were able to meet the full costs without much budgetary strain. With the 'massification' of education governments of most countries find it difficult to spare the required additional resources for education, and hence the proposal for cost recovery. However, it is significant that many Latin American countries increased their expenditure on higher education during the late eighties. Between 1985 and 1990 government financing of higher education, in terms of GDP, has increased from 1.5% to 3.1% in Argentina, from 2.1% to 2.7% in Bolivia, and from 3.8% to 4.6% in Brazil. In Mexico there has been an increase from 3.9% to 5.2% between 1985 and 1992 (Mungaray and Lopez, 1996).

In India, education being on the concurrent list, the expenditure on education is shared by the Central and State governments. The budgeted expenditures, for education (all sectors) and for higher education, for the years 1993-94 to 1995-96, are shown in Table 3 and illustrated in Fig. 1. It may be noted that during 1995-96 the budgeted expenditure for education (all sectors), for the entire country, was Rs. 36175.66 crore. Out of this Rs. 7951.93 crore was for plan expenditure and Rs. 28223.73 crore was for non-plan expenditure (Govt. of India, 1997b). The corresponding allotments for higher education were Rs. 3648.60 crore, Rs. 475.67 crore and Rs. 3172.93 crore. In the case of plan expenditure the share of higher education, with respect to total expenditure on eduction, is approximately 6%. In the case of non-plan expenditure it is about 11.5%, while for plan and non-plan, both taken together it is about 10%. The Centre's contribution to plan expenditure on higher education during these three years has been a little over 50%. However, its contribution to non-plan expenditure on higher education has decreased from 12.79% to 11.46%. Considering the fact that education is on the concurrent list it is reasonable to expect that the Central government should contribute a larger share. However, compared to 1994-95, the centre's contribution has decreased in 1995-96 by 4.66% in the case of plan expenditure, and by 4.11% in the case of non-plan expenditure.

Table 3 : Expenditure on Education (All Sectors) and Higher Education, 1993-94 to 1995-96

	1993-94	*1994-95*	*1995-96*
Education (All Sectors) : Plan			
States	2941.60	4261.99	5068.09
	(56.78)	(60.48)	(63.73)
Centre	2239.41	2784.44	2883.84
	(43.22)	(39.52)	(36.27)
Total	5181.07	7046.43	7951.93
Education (All Sectors) : Non-Plan			
States	21727.20	24818.82	26759.84
	(94.06)	(94.38)	(94.81)
Centre	1371.42	1478.19	1463.89
	(5.94)	(5.62)	(5.19)
Total	23098.62	26297.01	28223.73
Grand Total (P&NP)	**28279.69**	**33343.44**	**36175.66**
Higher Education : Plan			
States	155.69	234.89	230.62
	(49.77)	(47.75)	(48.49)
Centre	157.76	257.03	245.05
	(50.23)	(52.25)	(51.51)
Total	312.85	491.92	475.67
Higher Education : Non-Plan			
States	2433.66	2676.12	2809.02
	(87.21)	(87.55)	(88.54)
Centre	357.12	380.70	363.91
	(12.79)	(12.45)	(11.46)
Total	2790.77	3056.82	3172.93
Grand Total (P&NP)	**3103.62**	**3548.84**	**3648.60**
% HE(P) of E (P)	6.04%	6.98%	5.98%
% HE (NP) of E (NP)	12.08%	11.62%	11.24%
% HE (T) of E (T)	10.97%	10.64%	10.09%

Note . i) Expenditure is in crores of rupees.

ii) Figures in parenthesis indicate percentage.

Source . *Analysis of Budgeted Expenditure on Education, 1993-94 to 1995-96* (Govt. of India, 1997 b).

The plan expenditure on different sectors of education, since the First Five Year Plan beginning 1951 is given in Table 4, and the sector-wise expenditure illustrated in Fig 2. It is seen that amongst the different sectors of education the share of higher education was highest at 25% during the Fourth Five Year Plan (1969-74), remained stable at 22% during the Fifth and Sixth Five Year Plans but declined to only 8% in the Eighth Five Year Plan (1992-97). The share of technical education has been relatively constant being 14% in the Eighth Five Year Plan. The total for all university level education is thus about 22%. During 1994-95 it was 22.52%.

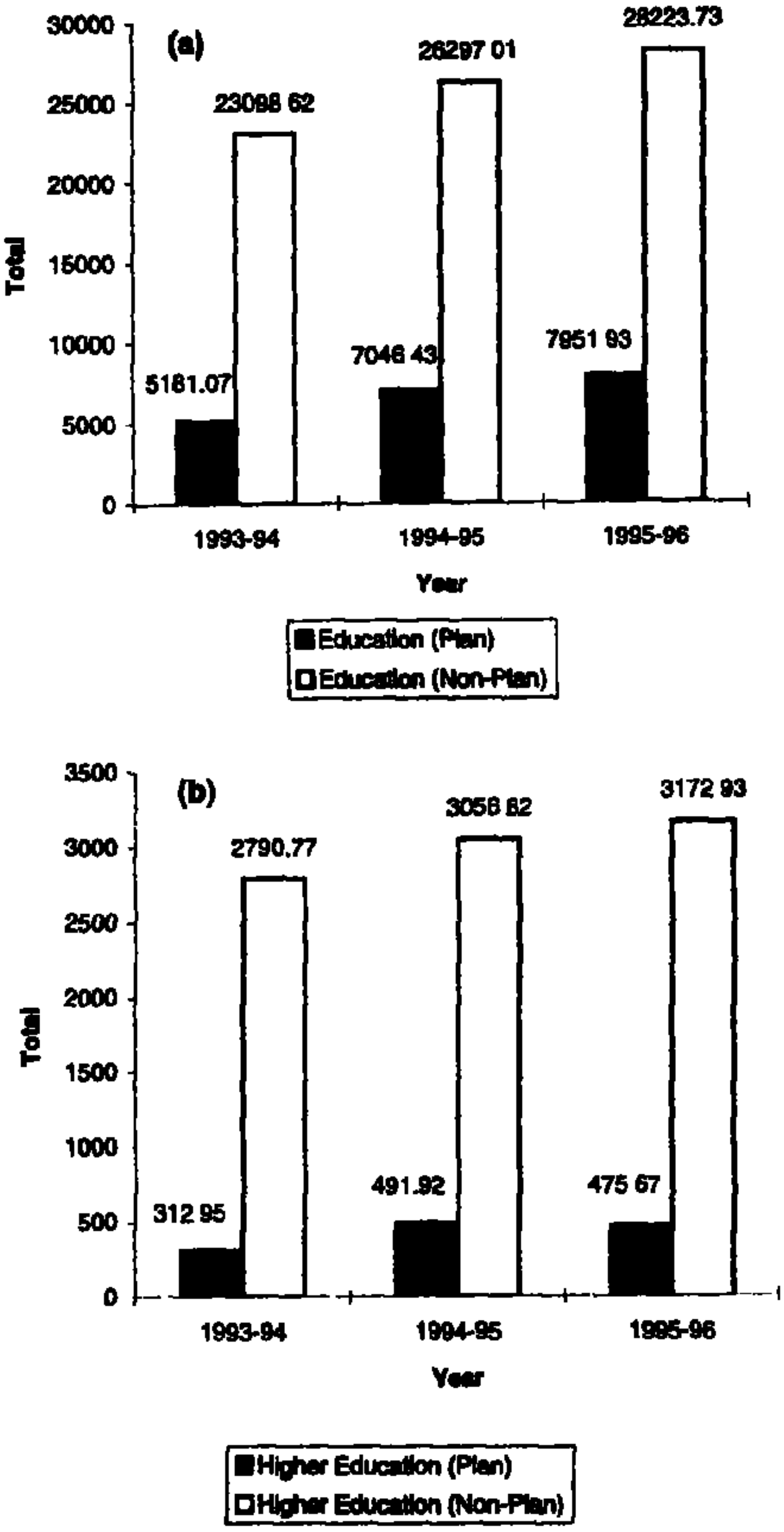

Fig. 1 : Expenditure on Education : (a) Education (all sectors), (b) Higher Education.

Way back in 1968 the Kothari Commission had recommended, that 6% of the GNP be spent on Education (Govt. of India, 1968). This is the figure that has been promised for over a decade now (since the adoption on the National Policy on Education, 1986), but unfortunately continues to be a mirage. In fact the allotment to education, as a percentage of DNP, has declined slightly in recent years and today stand at 3.5%. The share of higher education has been falling steadily. It was nearly 1% in 1980-81, declined to nearly half by the early nineties and less than 0.4% of the DNP in the mid-nineties. (Tilak, 1997). Hopefully, education will be given its rightful share of 6% by the end of the Ninth five Year Plan as promised. It is necessary that with this the share of higher education be raised to at least 1%. This would still be less than the share received by higher education in the OECD countries like U.S.A. (1.16%), U.K. (1.04%), Japan (1.04%), The Netherlands, (1.79%), Canada (1.98%) and New Zealand (2.53%). The figures in the developing countries of Latin America, as mentioned earlier, are much higher being in the range of 2.7% to 5.2%.

Table 4 : Plan Expenditure on Different Sectors of Education (in %)

Sector	*I Plan 1951-56*	*II Plan 1956-61*	*III Plan 1961-66*	*Plan Holiday 1966-69*	*IV Plan 1969-74*	*V Plan 1974-79*	*VI Plan 1980-85*	*VII Plan 1985-90*	*Plan Holiday 1990-92*	*VIII Plan 1992-97*
Elementary Education	56	35	34	24	30	35	33	37	37	47
	(850)	(950)	(2010)	(750)	(2390)	(3170)	(8360)	(28490)	(17290)	(92010)
Secondary Education	13	19	18	16	18	17	21	24	22	18
	(200)	(510)	(1030)	(530)	(1400)	(1560)	(5300)	(18320)	(10530)	(34980)
Adult Education	—	—	—	—	—	—	9	6	9	9
							(2240)	(4700)	(4160)	(18480)
Higher Education	9	18	15	24	25	22	22	16	12	8
	(140)	(480)	(870)	(770)	(1950)	(2050)	(5590)	(12010)	(5880)	(15160)
Technical Education	13	18	21	25	13	12	11	14	17	14
	(200)	(490)	(1250)	(810)	(1060)	(1070)	(2730)	(10830)	(8230)	(27860)
Others	9	10	12	11	14	14	4	3	2	4
	(140)	(300)	(730)	(370)	(1060)	(1070)	(2730)	(10830)	(8230)	(27860)
Total	100	100	100	100	100	100	100	100	100	100
	(1530)	(2730)	(5890)	(3230)	(7860)	(9120)	(25300)	(76330)	(47270)	(196000)

Note : Figures in parenthesis in millions of rupees.

Source . Government of India (1995), *Budgetary Resources for Education (1951-52 to 1993-94)*, New Delhi : Ministry of Human Resource Development.

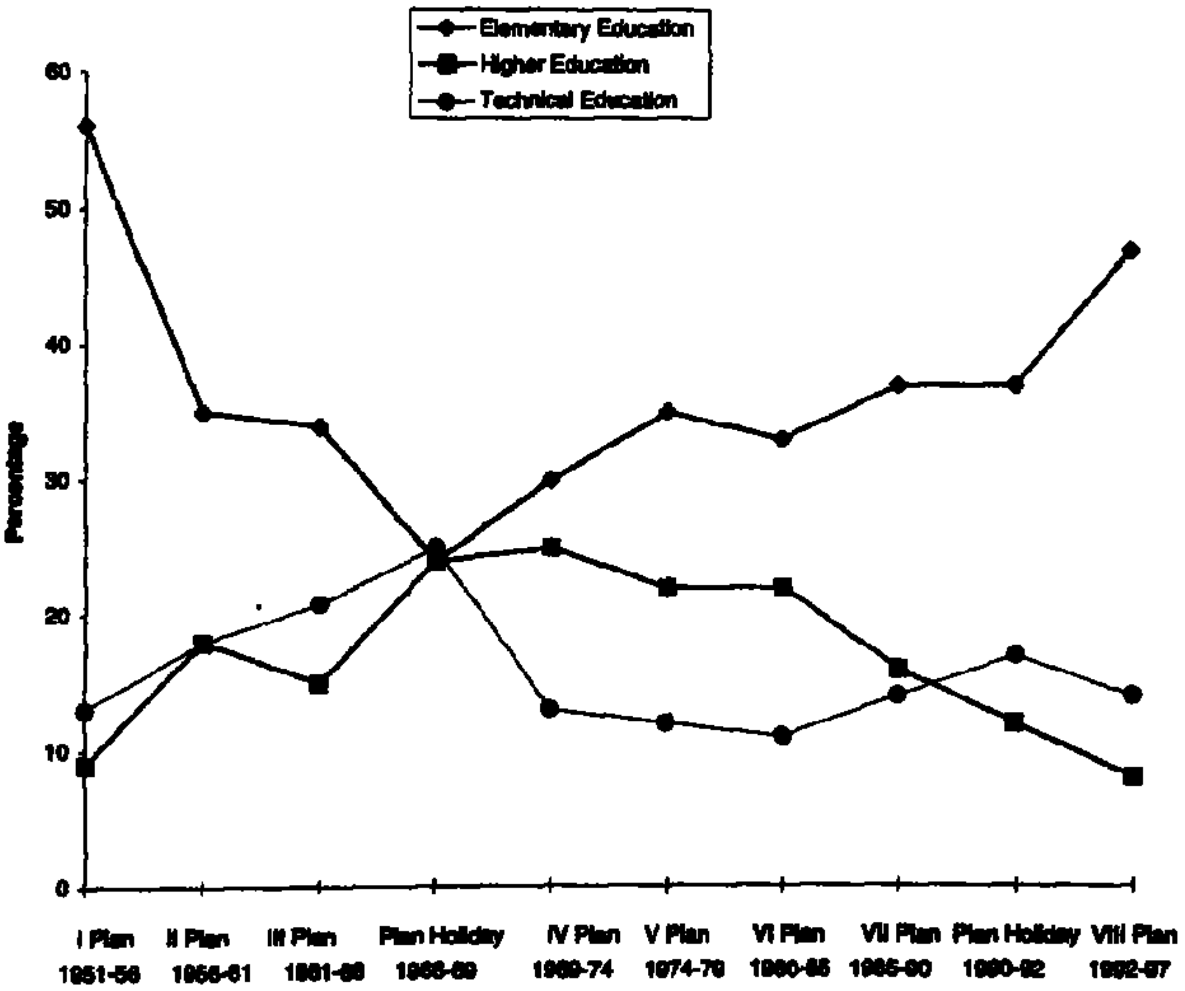

Fig. 2 : Sectorwise Expenditure during Five Year Plans.

Higher Education and the Science & Technology Base

In the fifty years since independence India has developed a science and technology base of which it can be proud. Following the break-up of the Soviet Union it has the second largest science and technological manpower though this is only about 0.27 per thousand population (compared to about 5 per thousand obtained in the developed countries). It spends about 0.9% of its GDP on science and technology. In the 1997-98 budget the allotment for science and technology was Rs. 8171 crore. The achievements in the fields of agriculture, space technology, atomic energy, electronics and communication and even in the basic sciences have been noteworthy. This has been possible because the universities have provided the much needed scientific manpower. However, the situation appears to be changing. Not only is the demand increasing but the source of competent personnel seems to be drying up. It is well known that research projects awarded to teachers in the universities often remain incomplete because suitable (NET qualified) scholars are not available or because there is not enough money for purchase and upkeep of essential equipment. A recent study (Kumar *et. al.*, 1998) reveals that there is declining interest amongst graduates for research in different areas of science and technology. This is in contradiction of the assesssment, made by Maddox (1993), who writes : *"India's science has a great and probably unique asset : the enthusiasm of young people for science and technology"*. Kumar *et. al. (op. cit.)* point out that between 1991 and 1996 there was only a 0.4% increase in enrolment rate for doctoral and post-doctoral programmes in contrast to the 2.1% increase in population and 5% increase in enrolment to tertiary education. They attribute this to the lack of job opportunities in the academic institutions and brighter avenues in other fields such as marketing. Added reasons are inadequate facilities, in terms of equipment and library, in the universities; and lack of proper environment. This is a disheartening development because skilled scientific and technological manpower will be required, in increasingly larger numbers, in the fields of agriculture, industry, communications and medicine. As Kasturirangan (1998) points out *"Manpower resources constitute a primary and essential input for a country's socio-economic development process. The goal of economic and social development can only be achieved if there exist adequate supplies of manpower with requisite education and skills"*. One may add that this manpower has to be of high quality capable of working in the frontier areas. Neglect of the universities will only make the problem worse. It is necessary to not only enlarge our tertiary education base but also to ensure that the education imparted is of high quality. A few privileged institutions like the IITs, IIMs, IISc and central universities alone cannot fulfil this task. Unless we support a much larger number of universities, and the colleges affiliated to them in substantial measure, our hopes of developing into a major economic power cannot be fulfilled.

Today there is a realisation that the health of our scientific research is not very good, partly because of the neglect of research in the universities that followed the establishment of a chain of national laboratories and research centres. It has to be borne in mind that field of science and technology is a dynamic one in which obsolescence, both in terms of ideas and equipment, are measured in short periods, often of less than a decade. Freshness of mind, a desire to succeed, vitality and enthusiasm are great assets in this field, and these are qualities to be found largely in the youth. Our largest investments should, therefore, be in the universities that have a regular stream of bright students in need of mature guidance. As Bhide (1990) states : *'To my mind one of the greatest mistakes in our planning process has been the neglect and impoverishment of our universities. In the absence of wherewithal the productivity of the research activity in the university system is low and understandably the universities are unable to promote meaningful industrial and economic growth"*. Pleading for a return of the centre of gravity of research activity to the university system he adds : *"we must realise that when resources are meagre it is prudent to plough them in the universities which have an inherent multiplier effect"*.

It is evident that to maintain and develop a research base, that can adequately serve the growing demands of society, the country will have to depend to a very great extent on our universities. These must be adequately supported, and the support cannot be restricted to the funding of some elite institutions. Universities all over the country, and especially those in our mofussil areas, must be supported by the government.

Higher Education for Social Development

As mentioned earlier the National Policy on Education, 1986, visualises education to be a process of empowerment through the development of knowledge, skills and values. Primary and secondary education can fulfil this objective through the creation of awareness and the generation of employment at the lower levels. However, for meaningful contributions that would lead to economic development it is tertiary education that holds promise of substantial contribution. Internationally, in the years between the two World Wars, the concept of elite universities for the privileged was slowly replaced by the concept of egalitarian universities responsible to society and committed to its needs. Dailland (1990) believes that the vigorous growth of socially committed universities reflects a confidence in higher education as a major instrument of social and economic progress.

In the years following Independence, and especially in the late sixties and the seventies, Indian Higher education underwent rapid growth with the conversion of the elite system of pre-Independence days to a mass system. In consonance with this change the University Grants Commission, in 1977, adopted 'extension' as the third dimension of higher education. The policy statement issued at that time stated : *"The university system also has a great responsibility to the society as a whole. All universities and colleges should develop close relationships of mutual service and support with their local communities, and all students and teachers must be involved in such programmes as an integral part of their education"* (*cf.* University Grants Commission, 1987).

Admittedly, not all universities have given due importance to extension work in their communities. However, many of them have been active and a few have made outstanding contributions towards generating awareness and assisting in development activities. Work relating to adult literacy, population control, village uplift, prohibition, environmental awareness and a number of other subjects have been undertaken by the universities through the National Service Scheme (NSS). Though the government has been utilising this scheme to push through a number of their socially relevant programmes the colleges and universities have not been given due credit. Planners and economists must appreciate the fact that the universities have been contributing to community development by acting as critic, advisor and helper (Powar, 1990). As critics their function has been to analyse the economic, social, political and cultural developments of the nation, and particularly of their own region. As advisors they have been conducting research on various social problems, and problems relating to agriculture, industry and management, and rendering advice. And as helpers they have undertaken tasks related to various socio-economic programmes through the extension activities described earlier.

Conclusion

The data and arguments presented above suggest that the authors of the discussion paper have erred, in making assumptions that are not truly valid, and that they have not assessed the practicability of their recommendations. More importantly, they have not taken into consideration important 'public goods' that are not easily quantifiable. These include the role of higher education in providing the much needed research base, its importance in creating awareness about social problems, and its contributions to community development through programmes implemented through colleges and universities. The discussion paper appears to have been guided by the suggestions made by the World Bank without considering the inconsistencies and contradictions in its reports.

As mentioned earlier India is a large country with a strong base in science and technology. In certain areas its capabilities are equal to the best obtained in the developed countries. It has ambitious plans for industrial and technological expansion. Its major drawback is that the available expert manpower is simply not sufficient to meet the projected demands of the country. And this can be remedied only if our higher education system expands significantly. As Tilak (1997) points out : *"Economic miracles have taken place in some developing countries (e.g. East Asia) mainly due to high rates of growth of their educational systems. A minimum level of 20% enrolment ratio can be viewed as threshold level for a developing country like India to reach a higher level of economic development"*. With a 6% enrolment ratio India can hardly expect to meet the requirements of a growing, quality-oriented, industry. It is relevant that the United Kingdom started thinking of 'top-up' tuition fees only after its enrolment ratio was above 25%. Curtailing subsidies, as argued earlier, will only lead to a decrease in enrolment, not to the substantial increase that is essential. The danger of foreign universities making inroads into India, in large numbers, is real and should not be neglected.

Evidently the authors of the discussion paper have not taken cognisance of the recommendations of our own committees that have studied the problem in some detail. The *Punnayya Committee* (University Grants Commission, 1993), which examined UGC funding of institutions of higher education states : *"The growth and development of higher education sector has been viewed by Indian policy makers and planners from the very early times as not merely an effort to establish India's cultural identity on the international scene but also as a means to enhance the quality and productive capacity of our manpowr. It is perceived also as a crucial input in our efforts to achieve self-reliance and autonomy in many frontal areas of strategic activity ..... It* *would be unfortunate if in the present debate on allocation of resources between sectors of education, this perception of the crucial role of higher education is lost sight of"* (p. 17).

The *Punnayya Committee* has recommended *"Taking into consideration the historical background, the present stage of development and the role of higher education, the availability of alternate sources of funding and the global experience, the Committee unequivocally reiterates that State funding must continue to be an essential and mandatory requirement to support higher education. It is the perception of the Committee that the State must continue to accept the major responsibility for funding the essential maintenance and development requirements of the universities"* (p. 7).

While maintaining that it is the primary responsibility of the State to provide essential finance for quality higher education we agree that the universities must supplement income through other sources, and also make efforts to curtail unnecessary expenditure. The rationalisation of fees is essential and in this respect the tuition fees have to be gradually raised so that the user contributes about 25% of the academic expenses. Going beyond this percentage would be difficult. Provisions wil have to be made for providing assistance to the needy students. It would, however, be necessary to carefully draw up criteria for this purpose to obviate misuse. Support from industry and alumni are other alternatives. Experience however shows that the former has not materialised though the latter holds some promise. For the individual loan scholarships have been advocated. However, experience from the world over indicates that the recovery rates are low, and *"in some instances loan programmes have been more expensive than continuing with a policy of outright grants" (Albrecht and Ziderman, 1991).* Going by our experience of the national merit loan scholarships, this will, in all probability, hold true for government loans in India. As for loans from banks the present indications are that there are very few takers. Government decisions regarding funding of higher education need to take these facts into account.

University administrators are aware of the fact that there are many avenues where expenditure can be curtailed. The *Punnayya Committee* (University Grants Commission, 1991) and the *Pylee Committee* (University Grants Commission, 1997) have both recommended that maintenance grants should be based on 'unit costs'. The Association of Indian Universities has suggested a methodology for the determination of unit costs (Association of Indian Universities, 1995; Powar, 1996) and has recommended that every university undertake this exercise. However, the use of unit cost as a basis for funding must be approached with caution. Imperfect as the system is at present it has to be first tried out over the next two or three years. The Association of Indian Universities has recommended to its member-institutions that they initiate the work of determining unit costs of different types. As pointed out by Powar (1996) *"The universities should consider this exercise as a self-assessment activity for finding out 'where the money goes' — for identifying areas of over-expenditure, as also those that are inadequately supported. A comparison of actual unit cost and optimum unit cost should help initiate a process of adjustment as regards faculty strength, number of support and administrative staff, laboratory and library support, support for research activities, and other expenditures. A caution : funding agencies and grant-giving bodies have to bear in mind that optimum unit costs cannot form the basis for abrupt changes in funding pattern"*.

The bottom line is that the government cannot afford to abruptly withdraw support to higher education as proposed in the discussion paper *'Government Subsidies in India'* circulated by the Department of Economic Affairs, Ministry of Finance. Such a step will have a detrimental effect on socio-economic development and on national identity. It is necessary that government continues to shoulder the major responsibility as regards funding of higher education.

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DIRECTOR, Regional Services Division

Higher Education : Is it a Merit Service?

Kamal Nayan Kabra*
P.K. Chaubey*

> "The wisdom of expending public and private funds on education is not to be measured by its direct fruits alone. It will be profitable as a mere investment, to give the masses of the people much greater opportunities than they can generally avail themselves of. For by this means many who would have died unknown, are enabled to get the start needed for bringing out their latent abilities. *And the economic value of one great industrial genius is sufficient to cover the expenses of the education of a whole town;* for one new idea, such as Bessemer's chief invention adds as much to England's productive power as the labour of a hundred thousand men. Less direct, but not less in importance is the aid given to production by medical discoveries such as those of Jenner or Pasteur which increase our health and working power, and again by scientific work such as that of mathematics or biology, even though many generations may pass away before it bears visible fruit in greater material well-being. All that is spent during many years in opening the means of higher education to the masses will be paid for if it called out one more Newton or Darwin, Shakespeare or Beethoven".
>
> —Alfred Marshal (1890), (*Principles of Economics*, Eighth Edition, 1949, p. 216, *emphasis ours*)

A year ago the Department of Economic Affairs of the Ministry of Finance of the Government of India brought out a discussion paper on government subsidies[1] in which higher education was identified as a non-merit 'good'. It has been argued that education beyond the elementary level falls outside the ambit of merit 'good' category as the benefits of subsidies on it accrue primarily to the recipients. It has been suggested by implication that education of higher level should not be subsidised by the government.

We intend to discuss in this piece the rationale and implications of considering or not considering higher education as a merit service[2]. Since the issue has been mixed up with that of subsidies and hence with the provision by public agencies, we also attempt to clarify such matters in order to free our discussion of unnecessary baggage or encumbrances. This discussion is followed, in the next section, by an exercise discussing some of the features that define merit and demerti goods[3] and distinguish them from other goods. This discussion, it is hoped, will help better delineation of the basic ideas. This, it is hoped, will pave the way for taking up an examination of the contention denying merit service character of higher education. In the end we recapitulate our major conclusions.

I

A commodity may have merit, demerit or neutral character. While merit or demerit or any other kind of services or goods may need some intervention of society, they have little bearing *per se* on the subsidisation or taxation of their production or consumption which are fiscal instruments for influencing price. Other instruments may be equally potent.

It is true that a society places some premium on the production and consumption of a merit good (relative to other goods) depending upon the specific historical conjuncture. In fact, premium or social value placed on the consumption of a commodity need not necessarily be applicable to the production of the commodity in question as the choice is often available to make it or to buy it. For example, a number of commodities which are highly polluting or hostile to ecological balance may not be produced but may nonetheless be consumed by resorting to 'transformation by trade'. Many countries try to ensure that they import rather than produce such products as would pollute their environment or would make a heavy draft on limited quantities of non-renewable inputs. Thus, demerits associated with the production of certain goods can be dissociated from the consumption of such products. It is basically on account of such factors that many industrialised countries are permitting relocation of a number of industries which pollute environment and/or guzzle scarce non-renewable resources into the late-industrialising countries. If regional differentiation becomes excessively pronounced, one may not be surprised to see such a locational pattern making its appearance within the backward, poverty-concentration areas which may lead to displacement and eviction of the poor, endogenous people, giving rise to the phenomenon of 'development refugees'.

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A number of issues of the kind discussed above remain fairly unexplored and vague owing to scant attention given to the qualitative nature and characteristics of the goods and services which can be used for classifying them on the basis of a set of explicitly recognised criteria. The concepts of merit goods and demerit goods and their implications on the theories of consumption, production, pricing, market distortions, taxation, subsidisation etc, can surely be counted among the issues which have remained peripheral. This has led to somewhat arbitrary and adhoc responses to analytical and policy issues concerning merit goods, which often result in treating these on par with the general run of goods and services.[4] A recent instance was seen, as mentioned above, for treating merit goods as 'deserving' recipients of state subsidies. Even if there is merit in the case that the consumption of demerit goods and services has to be discouraged by imposing a heavy dose of taxes on their purchase[5], there is little justification in mechanically applying the reverse of it to the consumption of merit goods, as though this were the only or the main or necessary implication of branding something as a merit commodity. A danger inherent in this approach is that in times of fiscal constraint, apologists are activated to debunk the merit characters of something or the other.

It is true that a society would encourage individual and/or collective consumption of a merit good. But there is no unique means or method best suited to this purpose. While subsidisation may bring down the market price of a merit commodity in order to give boost to its consumption, it may not be essential if the consumers or sections of them have the capacity and willingness to pay its full market price[6]. There may also be situations in which the constraint holding back the consumption or restraining the popularity of a merit commodity may be some supply bottlenecks or inadequate resource allocation for this kind of commodity, e.g., technical and management education in India of late 1990s. Apparently subsidisation would not help matters in many situations.

It is equally probable that some informational assymetries and misgivings may make people consume or even be addicted to certain merit bads. In such cases, mass education, information dissemination, prevention of disinformation, and campaigns to educate people may serve the ends of policy. Thus, one can see that merit goods character argues or suggests no necessary and unequivocal case for the subsidisation of such a commodity. Similarly, making the consumers of a demerit good pay a heavy dose of taxes, a la polluters pay principle, may in some cases serve the revenue objectives more than the one regarding curtailment of consumption, depending upon the strength of personal preferences. In such cases, the ends of public policy would be better served by resorting to non-price and direct measures.

The question of subsidies on merit goods is often related in an implicit manner to the necessity of their provision by public agencies. Probably it is such an association which makes the Discussion Paper cited above take up cudgels against the presumed, implicit or announced merit service character of higher education. The very fact of partial and limited privatisation of higher education with full or higher user-charges in India during the last few decades makes any such presumption redundant[7]. A number of merit goods and services (goods like milk, health foods, environmental aids, vaccines and services like health care, public sanitation) are generally seen to be quite justifiably produced by private entrepreneurs. The relationship between merit character and public provision of a commodity could at best be contingent one, like we saw the case regarding subsidisation.

Merit good need necessarily or *ipso facto* not be public or collective good either, i.e., based on externalities and divergence between public gains and private costs. Private purchases of such goods/services and private payment for them are capable of taking adequate care of production and consumption of such goods. The recognition of the merit of such commodities may involve action of public policies like fiscal, taxation, industrial, location, trade policies etc, in order to ensure that such commodities are able to attract adequate resource allocation and are priced and distributed in a manner favourable to their widespread and adequate consumption. If such commodities do not remain affordable in terms of price by certain sections, targeted subsidisation directly or indirectly by tax concession and rebate either on inputs or on final output may suggest themselves as obvious policy options. The same purpose may be served by policies inducting higher purchasing power or technological change to reduce cost and price. Advertising may also make these goods likeable. In such cases, at times it may be a better option to go in for direct production of such merit goods by public agencies in order to ensure both 'right' quantities and right prices. 'Right' distribution of incomes and wealth in order to generate adequate demand may also serve the same purpose. Even differential pricing and cross subsidisation may be thought of as a practical option.

It is possible, on the other hand, that the state may have to undertake production and distribution of demerit goods (tobacco products, alcohol, etc) in order to ensure restriction on the quantum produced and resources used, access to people and price on the basis of social valuation as also to prevent leakages or unauthorised sales and excessive draft on social resources by such commodities. In such cases, high monopoly pricing and yet non-profit maximising levels of output suggest themselves to let the private producers undertake the production of the demerit goods and the state may intervene by means of quantitative restrictions, taxation, limiting access by means of price, distribution, advertising controls etc. Outright prohibition of such commodities is a distinct possibility and has, in fact been tried on many occasions with varying degrees of success. In sum, merit or demerit character has little unequivocal bearing on the public or private provision of such commodities and their subsidisation. These issues have to be separated.

The propositions that seem to follow the discussion above are :

1. A merit good or service need not necessarily be provided by public agencies.
2. A merit commodity need not necessarily be subsidised.[8]
3. The state may have to directly undertake the production, pricing and distribution of even demerit goods.[9]

Although many of our examples do have the character of producing externalities, we wish to point out that externalities are not the *differentia specifica* to characterise merit goods. Externalities are just incidental in so far as all commodities with net positive externalities may not be treated as merit ones. For a number of such goods individual and social preference may be similar. It is the precedence of social values over consumer sovereignty that is the critical, defining element of merit commodities.[10]

II

The recognition of merit/demerit goods and services as a distinct category is a relatively new development in the theory of consumer demand. It continues to be somewhat opaque in comparison to fairly developed theory of consumer demand in the tradition of neo-classical economics. The mainstream theory treats all consumer goods on the same footing exception being the treatment of socalled Giffen or inferior goods for their special characteistics, as Solow too has pointed out with reference to labour. (*Ibid.*) The main proposition of the theory of consumer demand centre on the assumption that it is the consumer who knows the best what is good for him/her. This is known as consumer sovereignty which assigns axiomatic rationality to the choice of the consumers as revealed in the market under assumptions of perfect knowledge, independence of utility of each consumer etc. Willingness to pay a price for a certain amount of a certain commodity justifies the consumer behaviour in a supposedly positive approach. The goods and services on which the consumer makes a certain outlay possess some characteristics like 'taste, beauty, colour and energy' and the consumer's outlay is taken as the sovereign consumer's vote in favour of the chosen bundle of characteristics. Whether more such votes are cast in favour of commodities injurious to personal and social health or morals or the interests of or causing irreparable damage to economy, ecology, social harmony etc, or in favour of commodities which enhance the quality of life of the consumer, is of no particular concern or consequence to the positive economic theory. There prevails a certain kind of unconcern whether the effects of the 'free' and 'rational' choice of the sovereign consumer are positive or negative, desirable or undesirable. The whole ethos is in tune with the proposition that "there is no penumbra of approbation round the concept of equilibrium; and equilibrium is an equilibrium.[11]

A response to the recognition of this type of implications inherent in the theory was seen in the form of the evolution of the concept of merit/demerit goods and services, particularly in the writings on public finance and public economics. Instead of unconcern with the collective preferences and value-based desirability or undersirability, there emerged a clear-cut normative concern with the social, welfare and moral aspects of consumer choice.

However, in order to retain compatibility of this normative concern with consumer sovereignty based axiomatic rationality, the concept of merit/demerit was rooted in the community values, preferences and norms for a set of commodities endowed with some special features. It limits individual consumer's sovereignty but does not negate it. The commodities which were positively treated in such social or community preferences and norms were called merit goods and those which were given negative valuation were called demerit goods. Clearly this approach recognised the physical, social, ethical and welfare effects of consumption and involved social norms, values, traditions and preferences as the sheet anchor of this classification, justifying some historically evolved collective choices independent or irrespective of individual preferences, though not necessarily opposed to individual preferences.

Merit goods, like clean and sustainable environment and ecofriendly goods, education, health of the citizen, milk and other health foods etc, are specific to each society at particular historical juncture[12]. Similarly tobacco-products, addictive-intoxicants, drugs, gambling, prostitution etc, may be cited as examples of demerit goods/services. It replaces for certain commodities the norms of consumer sovereignty by community values embodying "ethically superior set of preferences." The question : who is to decide which goods are merit goods, is somewhat redundant in so far as even without assuming some kind of organic community or having agencies like the state as representing the principal called civil society, one can identify at specific historical junctures a broad measure of concensus over the treatment of specific goods and services as merit or demerit goods/services. To take as an example, today most communities consider prostitution as a demerit service, while there were times and places when societies accepted it without qualms reflected in the institution of *nagarbadhus*. To take another example, increasingly strident voice against tobacco products is a similar case just as green goods may be treated among recently emerging merit goods.

It is clear that neither physical features as such nor the socio-economic effects in terms of externalities — negative or positive, or indivisibilities are relevant or decisive for the concept of merit/demerit goods. Such attempts do discover some apparently objective criteria for something like merit/demerit commodities which emerge from considerations lying essentially beyond individual subjective utility and reflect the outcome of a historical process of interaction among individuals leading to the formation of common values or preferences, fail to recognise the essential nature, features and rationale for merit/demerit classification.

One can see how difficult it is for the theories which are ahistorical, asocial, amoral and are based on methodological individualism and treat the market regulated (rather than just market using) economy as socially disembedded to visualise concepts like merit/demerit commodities. It is important to realise that neo-classical, marginalist theory of consumer demand like the assumption of perfect knowledge, independence of utility of an individual from another, cardinal utility, absence of imperfect vision or myopia, absence of supplier created demand, etc. The value of these limitations and inadequacies, however lies in the removal of the illusion about the validity and universality of the deductive, axiomatic, individualistic theory of consumer demand. These criticisms which help one to create a mindset not hostile to the categories like merit/demerit goods which can be appreciated on the basis of the recognition of a social economy in which in addition to the economic market there is a political 'market' if one may extend the concept in this manner. According to such an approach, the economy has to look for guidance and value judgements, to factors beyond an individual's economic or financial hedonistic calculus of maximization. Thus, market signals do not remain absolute or context-free but have to recognise the complex reality of social existence which expands the horizon or catchment areas from which signals, guidance and decision-criteria are obtained, interpreted and used for individual, familial organisational and collective decision-making. It would be otiose to mention that the concepts of merit/demerit goods have rich and deep basis in social theory and have far-reaching implications beyond a norrowly economic approach. These concepts underline the fact that the market is an incomplete system. It is a recognition of such a wide range of factors which may make one realise how misleading, futile and inappropriate it is to connect merit or demerit character of goods and services with the presence, absence or extensiveness of externalities or the public or quasi-public character of certain goods and services. Those who adopt such an approach get caught in logical snags like the ones the discussion paper referred to above got into, which willy nilly had to recognise that essential minimum survival and maintenance level of food consumption may be a worthy candidate fo subsidies despite there being hardly and trace of externalities in connection with food intake.

We think that the foregoing examination of the issues connected with the concepts of merit/demerit goods should enable one to see how, why, to what extent and with what implications higher education has been treated towards the end of 20th century in a country like India as a merit service, without of course, endorsing *ipso facto* any claims on or denial of subsidies on them on *a priori* basis.

III

Education, particularly mass education, which is the main means of social enlightenment is universally considered a merit service. In a country like India with her massive backwardness and illiteracy, very small proportion of graduates in total population, noticeable technological stagnation and gaps, persistence of archaic socio-cultural practices and beliefs, subdued scientific temper and tremendous scope for application of science and technology to problem solving in diverse fields, there can be little doubt regarding the treatment of higher education as a merit service. It also follows that higher the level of education, the greater its intensity and spread and the greater its relevance to social needs and aspirations, the sharper would be the merit element of education.

However, it must be recognised that the merit content of higher education is related quite closely to the qualitative thrust and social responsiveness of higher education. Its sheer quantitative expansion irrespective of its content, substance and thrust can hardly capture the real import of according the status of merit service to higher education. The quotation from Marshall at the beginning of the essay shows how a pioneering economist showed the time-tested virtues of education as a merti service.

Merit character of education represents an expression of social preferences based on general consensus. In India it reflects the prevalent ethos of high respectability and value attached to learning and scholarship as reflected in her still quite powerful Brahminical cultural heritage and tradition, over and above the distinct improvement it makes to one's lifetime earning profile, even if there is a waiting period of varying lengths before one endowed with higher education finds a regular employment. This kind of pre-eminent value attached to higher education is also reflected in the *ex cathedra* formulations and recommendations of the reports of the education commissions and the five year plans. Recent advances in the economics of education centering round theories of human capital can also be cited to support the claims of higher education as a merit service — a service which goes beyond the postulate of consumer sovereigny in terms of either the quantum of supply, willingness to pay or regarding the principles and terms of granting access to higher education.

The role and contribution of higher education for a society, more particularly if it happens to be a late-industrialiser, cannot be over-emphasised. The significance of such higher education is not confined to the economic sphere alone; it goes beyond personal and social rates of return. Hence, its value is based on factor more basic than its contribution to faster pace of growth as indicated by the residual value assigned to technology, particularly to its softer aspects, for explaining the growth performance of the industrialised countries.[13] The contribution of higher education extends to the holistic concept of development in which various spheres of social existence make balanced and mutually complimentary contribution. Also for social equity, for development as collective self-empowerment at decentralised levels by various micro communities interconnected with each other on a broader national plane and for strengthening democracy and scientific temper, the role of higher education cannot be over-emphasised. So is the case regarding the tremendous improvement in productivity and quality of life that higher education can contribute to. One wonders how far it is appropriate to treat various segments of education like primary, secondary and higher levels as mutually competitive. Higher education which is the parent of all professions has also strong linkages with primary and secondary education in terms of supply of trained and qualified teachers, textbooks and teaching aids and the expertise for educational planning. Apparently it is very naive to suppose that elementary or primary education can be a merit service while higher education is a dispensable luxury for a few who are either too rich or too eccentric to be socially relevant. Certainly depending on the stage of development a society has reached as well as on other priorities and social economic structure, one may have to determine the specific relative value attached to higher education as a merit service vis-a-vis other claimants. But simply on the basis of some perceived and passing, transient financial constraints or labour market imperfections or the inability of a society to make adequate and proper use for the present of the graduates moving out of the portals of the universities, one cannot close one's eyes to the essential nature and contribution of higher education on the basis of which it is accorded the status of a merit service. On all these issues it is possible to provide detailed empirical and theoretical justification for treating higher education as a merit service. At the present stage of social awareness and understanding it would be a redundant exercise akin to forcing open an open door.

Primary education most certainly makes a direct contribution to the quality of life of a large number of people in a comprehensive manner, and benefits a relatively greater proportion of the relatively worse-off. On the contrary, the direct beneficiaries of higher education are by any reckoning far fewer and include a good sprinkling of the relatively better-off. But given their close and inevitable mutual dependence, particularly of the primary base level education on the higher level, it would be hardly proper to juxtapose the two as mutually feuding rivals. In any scheme of social prioritisation, the competing rivals to education as an integral whole have to be found outside the arena of education and in the current drive towards putting market forces in the commanding position, one would not have to strive hard to detect a large number of such imposters. The touching implicit concern with quaity in the discussion paper sits ill at ease with its apparent neglect of a large number of far more real sources of social inequities.

It is certainly true that higher education is a highly differentiated bundle of many diverse components. Each of these cannot have the same social merit or significance. No one has perhaps argued for such a proposition. It is true that through inappropriate educational planning and overall absence of scientific active and direct manpower planning in countries like India, there is a paradoxical situation that there is a considerable wastage of manpower coming out of the institutions of higher learning despite the high social merit attached to higher education. There are similar imbalances and inadequacies regarding the content and qualitative aspects of planning and policies in the sphere of higher education. This is probably inevitable when higher education is used, more as means for pacifying potentially malcontent and explosive elements in society whose real needs and aspirations are ignored in the development strategy than for realising its holistic development potential. It is just as a palliative and as a lollypop that so-called higher education is offered to millions and millions of young persons who harbour illusions and dream to improve the life-time earning prospects. It is the inability to see how the actual management of higher education has been messed up as distinct from the positive and significant intrinsic role that it has to play in a society aspiring to develop which is probably responsible for the position that higher education is a non-merit 'good'.

In sum, the policy and administrative failures of planning higher education in terms of streams, sublevels, courses and their contents, relevance to social problems and failures of planning the proper matrix of manpower requirements are real enough problems. However these should not be permitted to persuade us to derecognise higher education intrinsically as a merit service. Recognising something as a merit good is not the end step of social concern; it is just the beginning. The hyperboles extolling the great merits of higher education have scarcely been followed up with concrete and effective polices. This is the issue.[14]

IV

Merit goods have basically to be seen as things whose consumption is recognised as meritorious by society by a kind of consensus emerging out of historico-social evolutionary processes. The set of merit goods for a given society may change over time; though it does not change very frequently. While merit goods need not be either based on net positive externalities or be necessarily produced by the public agencies, it may be noted that there may be situations where the production of demerit goods is actually undertaken by public agencies.

It is correct that a society would like to promote consumption of merit goods and to discourage that of demerit goods. It may use its agency, which may be state, for the purpose. The state may use, depending upon the circumstances, fiscal or non-fiscal instruments. Subsidisation (or indirect taxes) may not be seen as necessary corollaries of the recognition of a commodity or activity as a merit good or service (or demerit good or demerit service).

When one looks at education in India, one finds that our society has long recognised it as a merit service irrespective of its level. While there is a clear need during any period for revamping and reorienting the educational matrix and for bringing it closer to social needs and ethos, it would be a great disservice to derecognise it as a merit service irrespective of its level. While there is a clear need during any period for revamping and reorienting the educational matrix and for bringing it closer to social needs and ethos, it would be a great disservice to derecognise it as a merit service simply because presently the state finds it difficult to maintain the level of expenditure and subsidies it had so far chosen to incur.

Notes

1 The paper is reportedly based on a detailed study carried out at the National Institute of Public Finance and Policy by D K. Srivastava, Tapas K. Sen and H. Mukhopadhyay. Its revised version has been published as a book under the joint authorship of D K. Srivastava and Tapas K. Sen in association with H. Mukhopadhyay, C. Bhujanga Rao and H.K. Amarnath.

2 Education is clearly a service as distinguished from material goods.

3. Merit bads and demerit goods are the two expressions used for the same thing. They are both odd terms as a bad cannot have merit nor can a good have demerit.

4. Robert Solow seems to have stressed this aspect when he argues very persuasively that labour is not just any other category and has distinct specific nature. This approach, according to Solow, is needed in order to prevent economic theory from flying in the face of reality. *See* Solow, R., (1990).

5. Of course, this is by no means the only or the most effective course of action.

6 Sovereignty of an individual consumer need not always and necessarily assert itself differently than the social norms though it is not obliged to be in conformity with them either.

7. We ourselves have decades of history of private (oddly called public) schooling of primary education. Merit goods can thus be seen to be efficiently produced by private institutions. Of late we are also witnessing a spate of capitation-fee based institutions in the sphere of engineering, medical and management education.

8. Reliance on preferential access, physical allocation and earmarking to finely defined target groups may serve the ends in view.

9. Demerit goods can be (legally or illegally) imported. Their consumption may be prohibited or limited by quantitative restrictions, although their enforcement generally poses problems

10. To start with Musgrave who can be credited for giving us the notion, had used the term merit wants. In the context of present usage of various classifications of goods he points out that the issue of externalities arises in relation to the various types of goods, the merit issue is related to the underlying nature of wants. While the former distinction is better dealt with in terms of social vs. private goods rather than in those of social vs. private wants, the latter is addressed more appropriately in terms of personal vs merit wants. He says that such is the case, though the problem has come to be referred to more generally as one of merit goods. *See* Musgrave (1986), P. 39

11. *See* Robbins (1932).

12. Whether goods/services traditionally approved and highly regarded by society may be considered merit ones, requires careful examination. Rituals, pilgrimage, exchange of gifts etc fall under this category.

13. *See* Kabra (1996).

14. In fact, the value and salience attached to R & D in growth economics can *a fortiori* be treated as assigned to higher education. The concern over brain drain as reverse transfer of technology clearly reflects this kind of identification of the two. (*Kabra*, 1976).

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Compressing Higher Education Budgets

Some Reflections

P.R. Panchamukhi*

During the recent period of economic reforms, the process of Liberalisation, Privatisation and Globalisation (LPG) is found to have significant implications for the growth of the social sector. The crucial components of this LPG are reduction in the non-plan expenditure, significant control over the budgetary deficits, withdrawal of subsidies from major sectors particularly social sector, promotion of the competitive forces within the economy, reduction of the tax rates across the board, particularly income tax rates etc. Withdrawal or reduction of subsidies for the social sector would imply gradual reduction in the government expenditure on the components of the social sector facilitating, rather compelling, the private sector to improve its allocations to it. In other words, the public sector outlays on education, health, housing etc, would be gradually reduced.

2. Reduction in the outlays for the educational sector cannot be uniform for all the components of the educational sector. Since, universal elementary education and the goal of 'education for all' would require additional allocations to elementary education, other things remaining the same, this would imply reduction in the public sector outlays to the higher educational sector. If additional resources are not allocated to the educational sector as a whole and if the outlays in the higher educational sector are not protected, then there would be compression of the higher education budget. This in turn would mean smaller budgets for ther UGC, ICSSR, ICHR, various scientific laboratories, state government allocations to the higher education sector etc. Other things remaining the same, such a reduction across the board in the budgets of the promotional apex bodies of higher education would imply that the budgets of the universities, colleges, research institutions, deemed universities etc, will be reduced. Though private sector is expected to improve its allocations to education, considering its nature as a firm believer in the *quid-pro-quo* approach and self interest maximization, its contributions may not be sufficient to make good the losses due to reduction in government expenditure.

3. Such macro level and micro level trends of compressed higher education budgets are witnessed in recent years. For example, from IV Five Year Plan onwards, in particular, percentage of education sector plan outlay for higher education has declined from 25 per cent to 8 per cent in VIII plan. For elementary education, it has increased from 30 per cent to 47 per cent. A step up in this however is desirable, but a steep decline in respect of higher education is not a happy trend at all. From 1983-84 to 1993-94 average annual growth rate of higher education expenditure (revenue account) has declined from around 24 per cent to around 5 per cent. During the recent years from 1990-91 onwards, the rate of growth of per student expenditure in universities and colleges has declined from 16 per cent to around 1.3 per cent! On non-plan account, the absolute amount of expenditure has even declined in 1993-94 over 1992-93!

The state-wise picture is not a cause for relief either. In most of the states the axe seems to have fallen on new developmental activities in higher education, which are so greatly needed in less developed states in particular. Thus, during the post reform period, the plan budgets have actually declined for higher education in many states (even in the states like Uttar Pradesh, Bihar, Orissa and Karnataka etc). This less satisfactory trend is seen in the resources position of individual institutions also. For example, the weakening resources position of University Grants Commission can be seen from Table 1.

Table 1 — Percentage changes in the resources position of University Grants Commission

Period	*Plan resources*	*Non-plan resources*
VI Plan over V Plan	7.9	87.4
VII Plan over VI Plan	146.8	117.8
VIII Plan over VII Plan	6.4	14.6*

**Upto March 1995 only, instead of 1997.*

Source . UGC Annual Report 1993-94

This shows that during the VIII plan period the UGC's resources have been significanfly compressed

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despite more or less steady growth rate of enrolment in higher education at about four per cent during the period.

That individual universities have been increasingly experiencing financial pressures during recent years is reflected by the following indicators.

a) ·Opening Balances in their budgets.
b) Budgetary deficits.
c) Deviations of Revised Estimates (REs) over Budget Estimates (BEs).
d) Trends in BEs over the years.
e) Trends in Actuals over the years.
f) Trends in deviations of REs over Actuals of previous year.

Though the data about the above indicators are not available for all the universities, from whatever data are available for selected Universities,[1] the following general observations can be made:

a) Opening balances in university accounts generally show declining trends, sometimes being even negative, indicating that the university opens the year with a high level of financial weakness and dependence on governmental resources in particular.

b) Many universities find that by the close of the year the expenditures are larger than the receipts that they could mobilize, leaving increasing deficits over the years.

c) Deviations of REs over BEs indicate the financial pressures experienced in the course of the year. A close analysis of the reasons given for such deviations shows that they occur mainly due to non filling of posts caused largely due to non-availability of funds. Higher RE over BE is invariably due to pressures on Salary heads, especially DA hikes, interim relief etc. Obviously for rises in cost of living, so many sectors are responsible and hence higher learning institutions should not be put under pressure due to this.

d) Budgeted expenditures show a faster growth than budgeted receipts, indicating that even while making the budget non-availability of resources is more clearly felt than the inevitability of expenditures. Obviously, educational institutions in general and institutions of higher education in particular, are the spending institutions and not earning institutions like firms. Similar picture emerges if we compare REs and Actuals with BEs for different items of expenditures and receipts separately. Even in respect of examination fees, which till recently were treated as a major source, experience of some universities has not been very encouraging in recent years. (For example for universities like Delhi University, Jawaharlal Nehru University and state university like Karnatak University).

e) The financial pressures have inflicted burdens on different activities of the institutions differently. A study of utilization of resources in universities and colleges[2] showed that due to such pressures reappropriation of funds has been effected more in favour of non-academic activities and peripheral items than academic activities. This obviously is a cause for concern.

A comprehensive study of this problem with recent information is needed. It is hoped that the UGC and individual universities and colleges would take an initiative in this respect. Recently, UGC has constituted a committee for this purpose.

4. Compression in the budgets of higher educational sector is justified sometimes on the ground that higher education is a 'de-merit' good as compared to elementary education which is considered as a 'merit' good. This seems to be a very simplistic way of looking at the concept of merit good and classification of various goods as merit goods and others The concept of merit good was introduced in the Economics literature by Prof. Richard Musgrave, an outstanding public finance contributor, way back during 1950s. Merit good is defined as that good which is so meritorious from the point of view of social welfare that over and above the private sector providing for its supply, the public sector also should provide for it out of its budgetary resources. In this background, it would be erroneous to conclude that higher education is not a merit good, leave alone that it is a de-merit good. In any economy, every thing depends upon every thing else. In this sense, all the sectors can be considered to be meritorious with a higher or lower degree of merit in them from the point of view of social welfare. Under no circumstances higher education can be considered as less of a merit good than other education types. Properly provided higher education obviously is a pinnacle in the education process starting from elementary

education. It has positive externalities for the purpose of economic development in general and also the process of the development of educational sector itself in particular. Only when higher education is not provided properly and when the products of higher education are not properly utilized, the economy experiences negative externalities on account of higher education. The students' strikes, disturbance in peace at work places, less adaptability of the educated people with the fast changing social and economic scene in the country, lower adaptation to the technological advancements, etc, can be considered as the negative externalities of the ill-provided higher education. If such negative externalities are so large as to overpower, whatever positive effects are experienced in the economy due to higher education, then obviously higher education would emerge increasingly as a de-merit good. It is not clear whether higher education, as is currently provided in the Indian economy, has reached such a state of point of no return. It is possible to introduce correctives into the higher educational system to maximize positive externalities from it. *It therefore follows that a blanket justification of diversion of resources from higher education to elementary education on the grounds that the former is a de-merit good is not only un-called for, but it is also wrong.*

5. Reduction in the budgets of higher education is sometimes justified also on another count of economizing on non-plan expenditure. Since, non-plan expenditure constitutes more than 80 per cent of the total expenditure of the higher educational sector, economy in the non-plan expenditure would imply a cut in the 'negotiable components' of higher education expenditure. It seems that the salary budget particularly of the administrative staff are increasing much faster than the salary budgets of academic staff in all the institutions of higher education (following the Parkinson's law). This might suggest a need for a judicious and prudent combination of academic and non-academic components in the development of higher education.

6. Across the board reduction in non-plan expenditure would have adverse implications for maintenance and upkeep of the infrastructure within the higher educational sector. This is because the salaries are one item which are 'non-negotiable' wherein the cuts cannot be imposed at all. The cuts on the non-plan budget of institutions of higher learning would therefore impinge on the expenditure on maintenance and upkeep of the buildings, maintenance of various research infrastructural facilities etc. This is the reason for the usual sight of stinking bathrooms and toilets in universities and colleges, dilapidated, ill maintained and un-painted walls of the buildings of the higher educational institutions, unsatisfactory upkeep of laboratories and equipments and books and library facilities in the institutions, unsatisfactory maintenance of the gardens and approach roads to these institutions, inadequate lighting and electricity supply arrangements affecting the academic programmes and computer use etc.

7. The policy of reduction in the government's budgetary deficits as required under SAP (Structural Adjustment Programme) would have implications for the budgets of the higher educational institutions. It is generally observed that when the decision is taken to increase the plan size or overall government expenditure, education appears as the last item, for considering increase in expenditures. When, on the other hand, a cut is imposed on expenditures in order to reduce the quantum of budgetary deficits education appears as the first item, the expenditures of which can be easily compressed. Education in particular is a soft non-resistant sector. Hence, no noise is heard when the educational outlay is reduced in the process of the reduction of the deficits. The quantum of deficits and the budgetary expenditures on education are found to be positively correlated.[3] Hence, when deficits are reduced, expenditures on education are also reduced. Since within the educational sector, elementary education is considered as a non negotiable component and rightly so, the cuts, would only fall on higher educational budget.

8. Thus, from several points of view of the reform, the budget of the higher educational sector is likely to experience and has actually experienced, as stated in 3 above, significant compressions in the course of the economic reforms. Even though in absolute terms budget might not have experienced compression in some cases, the rate of increase in the budgets is found to be declining during the reform period.

9. It is also seen that even though in money terms the compression may not be uniform, in real terms, the budgets of higher educational sector in general and institutions of higher learning in particular, have experienced compression.

10. What are the other implications of this compression of the higher educational budget? We have already alluded/attended to this question under 5 above. Apart from such effects on upkeep, maintenance, quality of education, etc, the distributional

effects are likely to be more grave. The number of students having entry into higher educational institutions is bound to grow in view of the widening of the base of the additional ladder. Per student expenditure would go on declining with resultant adverse effects on the facilities, quality of higher education etc. This has been actually witnessed as shown earlier. Incidence of such reductions in quality would be more acutely felt by the first generation learners, like girls, SC, ST, low income groups, minorities, etc. The socio-economically advanced population groups can withstand the quality reductions due to their better educational family backgrounds and possibilities of supplementary inputs.

In case the number of students entering into higher educational stream is curtailed with the purpose to maintain quality, then this is likely to have adverse implications for the equity and distributional considerations. It would be 'un-ethical' to restrict the entry to higher education for those who are the first generation learners, who enter the educational sector because of liberal policy of promoting education among the girls, under-privileged, socially backward and economically deprived sections of the society. With the completion of school education the option effect for seeking entry into higher education is strengthened for the first generation learners. If higher education follows selective admissions policy, then these first generation learners would be the first ones who are likely to be screened out for obvious reasons. This obviously would be a wrong policy to adopt. The unequal treatment of unequals would require fairly liberal admission of the new entrants into higher education. Though on efficiency ground, admissions to the 'multiple generation' learners cannot be denied, on equity grounds admissions to the first generation learners also cannot be denied. In this background compressions of the budgets of the higher educational system would only lead to pains and pangs of quality decline which in turn would have significant implications for the long term development of different sectors of economy including education itself. Good academics produced by good higher educational process would be able to handle well the educational sector and all the other sectors of the economy.

Hence, the process of overall development of the economy crucially depends upon how effective and how dynamic is the higher educational sector within the entire educational sector.

11. This paper should not be taken to mean that the resources to elementary education should be reduced in order to raise the outlays for the higher educational sector. The message intended to be conveyed is that outlays to the entire educational sector should be so increased as to provide for a fairly good increase in the outlays for the elementary educational sector and also an 'adequate' increase in the outlays for the higher educational sector.

12. It is hoped that the educational policy and the policy of financing of education would not suffer from defective telescopic faculty and that the long term gains of promotion of higher education are not sacrificed. India being a nation with the second largest population in the world, should continue to legitimately feel proud being the custodian of third largest number of scientific and technical personnel in the world. If promotion for higher education is relegated to the background, then obviously, this cannot be sustained. India's plans of emerging as a leader in South Asia and SAARC, would obviously depend upon how she can show progress in respect of technological advancement, adoption of and adaptation to newer technologies, how she can stand in international competition in the face of opening up of the economy, liberalization etc. India has obviously created fine institutions of higher learning and research, showing to the world her resolve to be progressive and dynamic and her preparedness to face the challenges of international competition. However, these institutions like national laboratories, technical, medical and scientific institutions need to be sustained, with proper and adequate manpower. GATT agreements, intellectual property rights etc, have shown that if the scientists, innovators etc, of the country do not take the initiative, the other countries would exploit the situation to the detriment of the interests of India. The patenting of neem, haldi, herbs, plants, saffron, etc, by other countries on account of slow initiative by India, largely due to lack of foresight, inadequate educational and research infrastructure, etc, would prove to be very costly for the nation. The fast developing satellite communication system, harnessing atomic energy for developmental purposes, environmental protection and promotion, computerization of different sectors of the economy, etc, obviously require increasing number of competent technologists, engineers, computer specialists, scientists, etc. On the health and medical front, the country is witnessing emergence of newer diseases, newer health care problems, not only in urban areas but also in a large number of villages remote habitations etc, for whose handling, a large number of medical care experts are needed. India cannot isolate herself from the effects of global warming up, for which she has

to take adequate precautionary, preventive and preparatory action. All this would require special kind of scientific personnel. Water problem which is becoming increasingly acute year after year, problems like earthquake which in some parts of the country are newly felt, drying up of forest cover etc, suggest the need to tackle them on an urgent basis, which also would require proper strengthening and orientation of our higher education. The Indonesian and Korean crises have brought home the point that economic reforms, financial sector changes etc, have their own dangerous implications. Unless tackled properly at the right time would destabilize the entire economy. Hence, the importance of adequate supply of competent socio-economic analysts, who can perceive the danger signals in advance, cannot be underemphasized.

All this goes to show that compression in the budgets of higher education would have serious implications for the very process of socio economic development of the country.

13. This does not mean that only the government is responsible for safeguarding against the compression of higher education budgets and also for protecting and sustaining them. Private Sector — especially through Industry — University linkage measures, can also be enthused to promote higher education. Mumbai University, particularly University Department of Chemical Technology (UDCT), can provide an example for how to mobilize funds from industry for higher education. However, all the 230 and odd universities and about 9000 colleges cannot hope to be so favourably placed like UDCT. Also, higher education promoted by industry is highly specific and ad-hoc. Development of higher education in the country, should obviously have a long term vision, and not just specific short term goal. It is here that government's role becomes important.

14. Higher education sector itself has to introduce measures to safeguard against the budget compression. Mobilization of funds through more pragmatic fee policy, introduction of new courses, more efficient utilization of its buildings, laboratories, libraries etc, mobilization through user charges for the use of facilities by others etc, have to be more vigorously tried.

15. However, as stated earlier, educational institutions are essentially spending institutions and not earning institutions. *'Institutions of higher education have higher involuntary spending propensities'* nonfulfilment of which would have serious negative externalities for the economy and the society for a long period of time. Hence, all steps have to be taken not only to avoid compressions of their budgets but also to ensure adequate improvements in them. Since, social benefits from higher education are substantial, and also since such social benefits have a longer time reach, it would be obvious that the society itself and hence the state being the representative of the society, has to own the responsibility towards higher education. Otherwise long run social costs due to inadequate state patronage to higher education would make the future of the country very bleak. *Subsidy to higher education in this sense is not a charity, but a legitimate responsibility of the state and a non-negotiable right of higher education.*

Notes & References

1. The way the University Budgets and Accounts are presented leaves much to be desired. In view of the different methods adopted by different universities, the comparative analysis is not facilitated at all. UGC and AIU may direct their attention to this aspect on a priority basis.
2. G.D. Sharma and F. Qamar, *Efficient utilization of Resources in Higher Education* NIEPA, New Delhi (mimeo) (Year not stated).
3. P.R. Panchamukhi, *Fiscal Components of New Economic Policy and the Social Sector · Some Reflections.* CMDR Monograph No. 8.

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Director, IASST.

Higher Education — A Non Merit Good (?)

J.L. Azad*

The system of higher education in India as also in quite a few countries of the world is subject to an inexplicable ambivalence on the part of the governments as well as the society. It is extolled as a crucial factor of survival; for it provides people with "an opportunity to reflect on the critical, social, economic, cultural, moral and spiritual issues facing humanity."[1] It is also considered as a potent instrument for producing scientific and technical manpower of the highest calibre. Further, it provides an excellent opportunity of vertical mobility to the deprived sections of the society. The sceptics, however, subject the system of higher education to sharp criticism for its apparent inability to provide education relevant to the needs and aspirations of the ever-escalating number of seekers of knowledge. It has also been castigated as the exclusive preserve of the elitist groups who are, generally, alienated from the socio-cultural mores of the country of their origin. It is quite often contended that the system of higher education has developed an in-built process of metabolic degeneration in that quite a large number of students entering the portals of university institutions are thrown by the way side resulting in a huge loss of human and financial resources.

The government's indifference towards higher education has been brought out in sharp focus by the Union Ministry of Finance in a paper, *Government Subsidies in India.*[2] It has been made out that "subsidies are advocated when the social benefits of a particular service or commodity are greater than the sum of the private benefits of the consumers. This difference between the social benefits and private benefits arises due to what economists call "externalities". Examples of activities involving substantial externalities include inoculation against infectious diseases, sanitation, environmental problems and basic education."

Elaborating further, the Ministry of Finance states that the category of goods and services that ideally qualify for subsidies should have two important characteristics : i) they should give rise to substantial externalities, and ii) it should be possible to price them even if imperfectly. These kinds of goods and services are 'quasi-public goods' or 'merit goods'. All other social and economic goods and services are 'non-merit' goods. The conclusion drawn in the paper is that "education beyond the elementary level falls outside the ambit of 'merit' category". Here benefits of subsidy accrue primarily to the recipients. In contrast, benefits of providing elementary education spread well beyond the immediate recipients and hence it is taken as a merit good. Thus secondary and higher education are condemned to be 'non-merit' goods and not worthy of government subsidisation.

The argument adduced in the paper is fallacious on various counts. Firstly, it takes a segmental view of education and arbitrarily classifies education beyond elementary education as a non-merit good. Education is a continuum and each stage is related to the chronological and mental age of the students. It is unscientific to compartmentalise it because there is a very strong element of inter-dependence among various stages of education. For example, secondary and higher education stages provide teachers for elementary schools. They also produce teacher educators and educational administrators. If there is a qualitative deterioration at these stages, the quality of elementary education is bound to suffer. Further, secondary education is a feeder to higher education and higher education produces the basic human material for research in humanities, physical sciences and technological fields. It is presumptuous to consider any one stage of education in isolation.

Even if, for argument's sake, the characteristics of the so called 'merit goods', as adduced in the discussion paper, are accepted, the conclusions drawn about higher education would appear to be contrived and far-fetched. The basis on which it has been assumed that higher education does not generate substantial externalities has not been spelt out. It may be mentioned that right from the classical economists, education, including higher education, has been considered as an investment in human capital. It is a potent instrument for accelerating the process of socio-economic regeneration of the country. According to the Eighth Plan document : "Education is the catalytic factor which leads to human resource development, comprising better health and nutrition, improved socio-economic opportunities and more congenial and beneficial natural environment for all".[3] When the Planning Commission talks about education, it does not exclude higher education from its purview. To say

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that higher education is not endowed with substantial externalities does not appear to be an acceptable proposition.

The paper itself speaks about potentiality of education to improve occupational mobility and voluntary compliance to law and social responsibility. These attributes are not the preserves of any one stage of education. In fact, higher education is a potent instrument of social cohesion and economic regeneration. It also accelerates the process of vertical mobility in that it substantially improves the productive capabilities of the recipients, who can aspire to be a part of the higher echelons of the society.

The second criterion that higher education is not amenable to pricing mechanism is also, to say the least, specious. There have been a number of studies which have attempted to work out unit costs of education at different stages of education. A number of studies have also estimated private costs of education. It has been emphasised that unit costing should be an important factor for determining the quantum of government support for higher education. The basic problem in these exercises is that there cannot be a universally applicable costing system. It has to be time specific, region specific and discipline/stage specific.

It has been argued that our subsidy regime is not tangibly progressive because a significant portion of higher education is appropriated by middle and higher income groups. Further shortages of seats in this sector are cleared by quality based screening in the shape of entrance examination, interview and group discussion, where the poorer sections of society are competed out. Implicit in the statement is the suggestion that in order to make subsidy regime tangibly progressive, quality based screening should be replaced by a system under which the standard of admission is substantially lowered. The deleterious effects of undervaluing of quality can be easily surmised.

It need hardly be stressed that higher education has to be the prerogative of the meritorious notwithstanding his economic status. In this process, there has to be no discrimination of any kind. Even the poorest of the poor should be able to join institutions of higher education in case he has acquired adequate intellectual capabilities. Emphasis on meritocracy should not be a factor for denying higher education its share of government assistance.

It may be mentioned that with the introduction of reservation of seats for the scheduled castes/tribes and other backward classes, which the states are trying to introduce with an alarmingly aggressive zeal, the pendulum has swung to the other extreme. Under the present dispensation, meritorious students belonging to higher castes are finding it extremely difficult to obtain a seat, particularly in professional colleges. The so called poorer sections are appropriating large percentage of seats in colleges and universities.

Mercifully, scientific and agricultural research has been categorised as a 'merit good.' As is well known, research is the culmination of educational endeavour. In case higher education preceding research stage is termed as a non-merit good and denied government assistance, its quality is bound to deteriorate. Under the circumstances, research, whether scientific or non-scientific, will also be of a lower quality. One cannot build up an enduring edifice on a weak foundation.

The world is witnessing a quantum jump in technological development. Breath-taking changes are taking place in various scientific and technological fields. A major technological revolution is taking place in products and processes having at its core new discoveries and application in information technologies. In India also, advances in sciences and agriculture have ushered in a new era of socio-economic development. The Green Revolution, the Operation Flood and the breath-taking innovations in information technology would not have been possible if there were no advancements in basic sciences and engineering and technology etc. All these underline the need for laying adequate emphasis on secondary and higher education.

A look at the production of scientific and technical manpower reveals huge disparities among the countries of the world. Table 1 gives estimates of such manpower in various continents of the world :

Table 1 — Scientific and Technical Manpower Potential : Estimates for 1980 and 1985.

Continents, major areas & groups of countries	*Year*	*Estimated number*	*Estimated number per million of population*
World	1980	79187	18200
	1985	110760	23442
Africa	1980	1052	2593
	1985	1623	3451
America	1980	22925	45243
	1985	37993	56956
Asia	1980	22925	8944
	1985	32670	11,686
Europe (including USSR)	1980	26733	35714
	1985	37369	48600
Oceania	1980	785	36941
	1985	1105	48213

Developed countries	1980	58903	52753
	1985	61247	70452
Developing countries	1980	20284	6272
	1985	29513	8263

Source : Manuel Castells *in* Jamil Salmi & Adriaan M. Verspoor, (Ed), *Revitalising Higher Education*; published for the International Association of Universities and Elsevier Science Ltd., Paris; 1994, P. 22

It would be seen that there are large disparities in the number of scientists and technologists per million of population in different countries of the world. The overall difference between the 'developing' and the 'developed' countries in 1985 was about 1:8.5. The corresponding difference between Asian countries and the USA was about 1:5, while the same between Asian countries and the entire world was about 1:2. This difference is further accentuated by the continuous migration of highly trained scientific and technical manpower from the developing countries to the developed countries, primarily in search of greener pastures but in some cases in pursuit of further studies and research. As a consequence, this phenomenon" aggravates the structural gap, concentrating the best scientists and engineers in a few countries, and within these countries, in a few institutions and forms in a self reinforcing trend that creates the foundation for the most fundamental inequality in wealth and power in our new technological age".[4]

There have been a number of studies of the economic value of education as well as higher education. It has been found that social rates of return from higher education range between 10.4 per cent in the case of graduates in humanities & social sciences to 12.2 per cent for medical graduates.[5] It has also been revealed that generally private returns exceed social returns i.e. an individual receives more from higher education than the advantage that accrues to the society.

In the case of research, the accretions to the society are very significant. In a study on estimated social rates of return from agricultural R&D in Asia, Pray (1978) found that between 1906 and 1956 the crop yield in Punjab increased between 34 and 144 per cent. The corresponding increase in rice production in Indonesia was 100+ per cent.[6]

Based on these studies, it was conclusively proved that "Social rates of return from investments in new industrial technology in developing countries seems to be very high, perhaps 30 per cent or more, and that technological change in many industries has been based, to a significant extent, on recent academic research. In the information processing, electronics, chemicals, instruments, drugs, metals and petroleum industries in the USA, about 11 per cent of the new processes could not have been developed (without substantial delay) in the absence of recent academic research — without academic research, it seems likely that there would have been a substantial reduction in the value of society's economic output. A highly simplified model suggests that social rate of return from the investment in academic research may have been about 20-30 per cent..."[7]

The preceding analysis underlines the fact that continuous outflow of quality research is the *sine qua non* of social, economic and technological development. It also emphasises the fact that research cannot flourish under an impoverished system of higher education. Arbitrarily branding higher education as a non-merit good and denying it financial support, so vital for its development, would ultimately lead to an irreversible deterioration in standards of higher education and take the country far backward among the comity of nations.

In order to reform the subsidy regime, it has been suggested that the scale of subsidies should be reduced through phased increase in user charges. The present scale of 90 per cent subsidies should be reduced to 50 per cent in the next three years and to 25 per cent in another two years. This would reduce the fiscal deficit from 6.5 per cent of the GDP to less than 2 per cent of the GDP.

While it is difficult to agree to a drastic reduction in the level of subsidies for the so called non-merit goods including higher education, there is a very strong case for increasing cost recoveries at the post-elementary stage of education. Admittedly, eduction upto the age of 14 is the Constitutional responsibility of the State. Beyond that stage, endeavour should be made to enhance the level of tuition fees and other charges so as to provide the much needed financial sustenance for university institutions. Any across the board upward revision of fees would, however, hit the weaker sections of the society. In order to avoid this situation, it may be useful to introduce a differential system of tuition fees and other charges. Under this system, merit cum means should be the criterion for determining the level of fees. Further, a very comprehensive and all embracing scheme of loan scholarships should be introduced so that economic disabilities do not hamper the educational progress of the students. The introduction of loan scholarships, for students in professional courses, in the first instance, would generate a re-

(Contd. on page 47)

Higher Education — A Non-Merit 'Good'

Continuing with the Colonial Debate

R.P. Singh*

It is interesting to note that there are certain issues that never seem to lose either their relevance or validity. Currently we are faced with one such problem. Who should finance higher education? Is it good for the individual or the nation? Is poverty-stricken talent welcome here or the doors are open for the rich-mediocrity too, since the latter can finance her/his fancy and the former cannot even aspire to his ardent desire? etc. Under the guise of a dubious premise an odious comparison has been made between the usefulness of primary education and higher learning for the society.

Since I see in this (unfortunate) debate a recurrence of an old colonial controversy I suspect the motives of the debaters are not very transparent. The subsidy issue is made relevant on the ground that one who derives the benefit from a facility — be it a hospital, judiciary, police or school should be asked to pay for the goods and service. This logic suffers from a major flaw in as much as that it regards all services to be on hire and all goods on sale for an individual if he/she can pay; and distinguishes this benefit as a bargain aimed at personal consumption in utter disregard of the fact that society as a whole should benefit from it. Secondly, it suggests the possibility of quantifying the advantage an individual can or does actually derive and puts a price tag on it rather retrospectively.

Both these premises are open to challenge.

This paper examines the entire question of subsidising education at different levels differently and suggests a reconsideration of the matter. Indeed, the author believes that this issue of subsidy has at its base the logic of market-economy versus social welfare schemes. As an evidence in countries where their governments have pursued market-driven policies the benefits of development have not reached the majority. And the reason for this sorry state has been traced to lack of sustained investments in health and education. (*See*, UNDP's *Human Development Report*, 1996). In India the policy-framers have not been able to explain why can we not retain the world class skills we are producing and why do we not in effect nurture primary education and provide health care for all. Therefore repeatedly the point which comes to the fore is that as a policy why do we not let the highe education subsidise itself and make the governmer free for concentrating on providing primary education to all since all studies which link education wit social development pinpoint the maximal contribu tion accruing from the primary education sector. Particularly because the resources are limited and a substantial number of Indians have realised the value c education and are willing to invest in it why not le them support the system of higher education, becaus in any case, they are the ones who are taking all th advantages from this heavily subsidised provision.

On the face of it this logic could be easily defended but we do not seem to realise that if reall applied the already divided and hierarchical societ would legitimise the further deprivation as well a sharp societal division and the ones who would lik to challenge the very premise of this logic woul eventually fall into the category of 'rebels' and thi may even invite punitive measures.

It is here that one finds the continuation of colo nial logic persisting in the most refined and dismissive sense. As far back as 1854 the famous Despatc had envisaged the use of English for higehr educ tion for the select few and vernacular education fc the masses. It had visualised the role of governmer in fostering mass education but the higher educatio was to be left to the private initiative. The Despatc described the scenario thus:

> "It is to this class of institute (higher) that t attention of Government has hitherto been pra tically directed. They absorb the greater part the public funds which are now applied to edu cation purpose. Our attention should now directed to a consideration, if possible, still mo important, and one which has hitherto, we a bound to admit, too much neglected".

For the first time therefore an educational bu reaucracy was created to regulate the enforceme of policy decisions and the consequence is before today — we have rules and the regulatory authori but no vision. Since it is difficult to change rules whic have become so sacrosanct that it is more convenie to bypass them rather than have them changed replaced. The grant-in-aid system is a colonial heri age and we have once again come back to it for

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very different purpose (reducing cost of education) without analysing why this system was created at all (i.e. subsidies offered) and why it failed to achieve the desired results?

The reasons for a class monopolising all educational provisions — whether higher or lower and the others reluctant to take advantage of it lie more in societal organisation than in the economic deprivation alone. Recent studies in Kerala, Haryana and elsewhere have established the veracity of this statement. Lower rates of literacy in Haryana and higher literacy rates in Kerala have nothing to do with poverty or affluence respectively.

However the point at issue is the statement made in the paper circulated by the Government on subsidies. According to the logic inherent in the circular I do not find any novelty or even an inkling of a model the Government may like to offer as an ideal. How many options does the Government have? The possibilities are as under:

Model No. 1 : The Government of India may offer primary education to all and see to it that the poorer and deprived sections of society are not neglected any more. For this purpose additional allocation for the purchase of books, clothes and even midday meal is provided to these children. I think the Government intends doing precisely this. In their attempt to succeed in this endeavour the Government may like to change the class-biases in the textbooks to suit these sections as well as raise their motivational levels as high as those of their economically better off compatriots. The higher education could be partly subsidised to the talented from this section of society.

For the rest of the society — that it, the one's who can afford would be made to pay the real cost of running an institute of higher learning. How this class gets primary education is not a major concern of either the Government or those who are interested in their ward's education, This logic overlooks the reality — for them a public provision of education and its utilisation by them is even otherwise not very agreeable.

Model No. 2 : The first part of the model no. 1 is repeated here but the latter part of the scheme stands modified. This class could be asked to pay a little additional money so that the Government does not have to offer any grant-in-aid to the poor.

Model No. 3 : This model expects most of the universities and colleges to improve the quality of their education to international standards so that they may succeed on two counts a) they can meet the challenge of foreign universities on Indian soil; and b) they can earn enough foreign exchange both in terms of savings from what would have gone outside India and rake in instead benefits through the provision of quality education.

I do not think the Government has this model in mind for the simple reason its imagination may not cover such unchartered seas.

Indeed the chances are the Government of India is either trying to rationalise her failure of having understood its own society which it governs or has missed on imagination regarding the consequences of their colonial psyche. This policy has failed to take note of the many researches conducted on a variety of correlations between education and society. For example, the relationship between low motivation levels among the poor and their equally poor academic achievements; or urban middle class biased use of language in the textbooks and its negative correlation with school attendance etc. While ideals are meant to be pursued and attained they rarely get transformed into reality. But life without an ideal can be very dull.

In the process of pursuing an unworkable paradigm and armed with faulty logic the Government seems to have overlooked the actual consequences of such a policy:

a) Granting the fact that the Government in reality does what it is proposing to do — more provision of a facility would not raise the rates of literacy. Also, there is no guarantee that in relation to their rural equals the urban-poor will eventually not monopolise these provisions. Inequity among the poor could prove as problematic as the one Government is facing today.

b) The first subject disciplines which will wither away may include Philosophy, Languages etc. The immediate gains from several such disciplines are not very obvious, therefore, if Government overlooks their importance no one else will. But Philosophy — the mother of numerous offsprings, is bound to suffer immensely and in the process nearly all Religions would lose their moorings.

c) If higher education includes engineering, technology, space research, agriculture etc and the same logic is extended to these areas too, this peculiar vacuous cost-benefit analysis may put the Nations's survival itself in jeopardy

Thus far we have relied too much on the wisdom of our bureaucracy, for a change, we need a break.

Education : Incentive Structure, Misallocatior of Resources and Policy Responses

Autar S. Dhesi*

Education is an important investment in human capital. It promotes social and economic development by building human and technical capabilities of a society. Therefore, it can be employed as an important instrument of socio-economic transformation of a traditional society as well as of promoting equity. That its benefits are so broad and pervasive, and the fiscal resources are limited, makes it an important policy area. Clearly defining societal objectives, that would vary with the level of development, and their corresponding reflection in intrasectoral priorities is necessary to achieve optimum results. Failing this, the education system may become both inequitous and inefficient as a result of misallocation of resources.

Development Strategy and Education Policy

Development strategy adopted by a country impacts intrasectoral allocation of resources. In general, development strategy reflects the nature of the ruling elite and its perceptions of underdevelopment and the type of society it visualizes in future. This has a bearing on the educational policy of a society. More specifically, development strategies may be expected to vary with respect to skill requirements, financing patterns and priorities in education.

Education was considered at the time of independence as an important instrument of socio-economic transformation as well as of promoting equity, individual mobility and national integration in the context of hierarchical and fragmented nature of Indian society (*Chanana*, 1993). In the context of planned development, mass literacy, generation of skills of various types and levels were considered priority areas in education. However, development strategy adopted by India, with excessive emphasis on modern urban-based industry in a protected environment had an inbuilt bias for investment in higher education (*Dhesi*, 1996*a*; 1996*b*). Social compulsions not withstanding, primary education soon slid down the scale of priorities (*Dhesi*, 1986; 1997).

Schooling is considered largely a function of institutional structure. It is the latter that determines pliable margins for maximizing profits or opportu nities. The dominant groups encourage the socie to invest in the kinds of skills and knowledge th indirectly benefit them. If the basic institution framework makes income distribution the preferre economic opportunity, type of skills and knowledg generated would be different from that in respons to a productivity increasing opportunity (*North*, 199 p. 80; *Dhesi*, 1996*a*).

The institutional structure as evolved in the cor text of a centralized development strategy adopte by India has created strong incentives for individu als to seek higher education and employment in th modern sector. In the context of largely imperfe political and economic markets, emphasis has bee on appropriating maximum gains from public spenc ing by manipulating these markets. The incentiv structure, consequent to institutional structure, pro motes the attainment of higher and higher qualifica tions. Higher the qualifications, better the chances attaining a higher salary and status (*Dhesi*, Forthcom ing *b*).

The centralised development strategy set in mo tion socio-economic processes creating a structur bias in favour of higher education (*Dhesi*, 1989*a*). Th initial stated objectives of education not-withstanc ing, the development strategy created an incenti structure lending priority in public spending higher education at the cost of basic education. Thre complimentary pieces of data used to identify th priorities within the education system — resourc intensity (measured by unit costs), coverage and th extent of government subsidization — suggest th there is a structural bias in favour of higher educ tion (*Tan & Mingat* 1992).[1] The subsidy to studen tends to increase with the level and very low co recovery, private rates of return to education a higher than the social ones (*Dhesi*, 1996 *Psacharopoulos*, 1985). The more expensive the cours higher is the subsidy level. A second degree yielc higher private returns than the first. Similarly, retur to professional higher education are higher than tho to general education (*Dhesi*, Forthcoming *b*).

In general, social costs increase much more ra idly than private costs with the level of educatio Due to increasing gap between private and soci

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costs, expected private returns increase more rapidly than private costs. Under the circumstances, a rational individual should aspire to acquire as much education as possible. Consequently, pressure of demand for education tends to increase with the level of education. With supply of education being highly responsive to social and political pressures, an inbuilt tendency sets in for expansion of higher education resulting in increased misallocation of resources in terms of social costs.

Further, as supply of graduates outstrips the generation of job opportunities, educated unemployment increases. In a situation of excess supply of the educated, educational qualifications for jobs tend to increase, and additional education becomes for many 'defensive investment' to maintain relative market positions. Initially, the educated joins the ranks of unemployed with a strong tendency for the education level among them to rise. The better educated among them tend to lower their aspirations and accept jobs requiring lower levels of education. The employers respond by raising the formal educational entry qualifications for jobs. Thus excess qualifications for jobs become formalized. Because of trade union pressure, wages get linked to the level of educational attainment of employees, and link between wage and productivity breaks down. The existing distortions in wage differentials get magnified, thus stimulating the demand for higher education even further. The increasing educated unemployment, therefore, induces demand for higher education. Paradoxically, the more unprofitable a given level of education becomes as terminal point, the more demand for it increases as a pre-condition to the next level of education. Indeed, those who for some reason are unable to continue their education suffer most. In contrast, the better-off individuals continue to overqualify themselves by acquiring additional education.[2]

Unless a proper functioning reward and cost structure promoting equity and efficiency in development and allocation of human capital is instituted, society has to go on bearing high social costs. The existing institutional structure promotes excess supply of the educated which leads to a situation with overpaid and overqualified educated employed as well as unproductive educated unemployed. All this reflects a serious misallocation of resources. Therefore, from society's viewpoint, it would be rational to give priority in public spending to basic education with relatively high social returns and to increase private share of costs with the level of education. The existing bias in public spending in favour of higher education is not only inefficient but also inequitious because higher education has a narrow social base and students typically come disproportionately from upper income groups (*Dhesi*, 1996*b*).

Dysfunctional Education System

The bias in public spending in favour of higher education has made the education system largely dysfunctional. First, vast sections of the society have been deprived access to quality basic education. India is close to achieving universal coverage in primary education. But the completion rate is only 37% as compared to Asian region's 61%. The completion rate among the disadvantaged groups is much lower than the average (*Dhesi*, 1996*b*). As a result, literacy rate is quite low (52%). It is even significantly lower in rural areas and other disadvantaged sections of the society. Second, it creates excess demand for higher levels of education. The supply of education being highly responsive to political pressure, the bias in public spending has led to an unplanned expansion of higher education with declining standards. While the enrolments in higher education have grown at a rate of about 10% per annum close to half a century inspite of calls for check, government expenditure increased by 2% per annum, and expenditure per student has declined by 2.7% in real terms (*Altbach*, 1993). In general, the rates of growth of enrolments have been found to be higher at each successive stage of education as compared to the preceding one. Likewise, the expansion of educational facilities at higher level has been more rapid than at the preceding levels. However, at all levels the rates of growth of educational facilities have been lower than those of enrolments (*Dhesi*, 1989*b*). It explains to some extent the general decline in quality of education at all levels. Some of the major reasons for this unhealthy situation have been education system's overdependence on government finance and structural bias towards highly subsidized higher education constraining the total resource availability.

A paradoxical situation of the education system is that inspite of strict imposition of government regulation, it has remained outside the scope of rational planning and administration (*Altbach*, 1993). The system has frustrated the planners and reformers in their efforts to steer it. So minor reforms not withstanding, in general macroplanning for education in the context of 'virtually a command economy' has failed. Even the specific innovations remained peripheral to the system. The quality of output is poor. With a few exceptions, the system's output is not comparable internationally. The pockets of excellence in teaching and research are surrounded by a sea of substandard institutions. Further, the system lacks flexibility and inhibits initiative and innovation. It is not conducive to the pursuit of new ideas and hence to attaining excellence. Its meaningful links with production hardly exist.

However, the unplanned massive expansion of higher education has been accompanied by a steady rise in the educated unemployment. Not only the incidence of unemployment is lower among persons belonging to higher socio-economic groups, they get jobs quickly and are better paid (*Dhesi,* 1989*b*). In general, it has been observed that the incidence and duration of unemployment vary with the type and level of education, sex, socio-economic status, final grades and region (*Dhesi,* 1989*b*). More specifically, graduates with specific skills in technical and applied areas enjoy not only relatively high employment probability but also are better equipped to exploit the market opportunities successfully for self-employment than those with general skills in arts and humanities. Most of the registered educated unemployed also belong to the latter category. In enrolments also, this category dominates. Consequently, given low employment probability of such graduates, their number among the unemployed has been increasing rapidly (*Dhesi,* 1997).

Policy Responses

The incentive structure encourages individuals to acquire as much education as possible resulting in excess demand for higher education. In our economy that has yet to ensure access to quality basic education with relatively high social returns, optimum social strategy demands that excess demand is tempered and priority in public spending is given to basic education. In addition, private share of costs should increase with level of education to augment resources. The inherent conflict between optimal individual and social strategies is due to divergence between private and social valuations of investment in education that tends to grow with level of education. This divergence in turn is due to inappropriate public and private policies with regard to wage differentials, social selectivity and the pricing of educational services.

Since supply of educational places is politically responsive, answer to excess demand lies in tempering demand to a more realistic level by suitably modifying the incentive structure. One of the methods used to control excess demand has been to restrict access. However, given the cruciality of higher education in development, exclusive reliance on methods of access may not be the correct response to excess demand. At the same time, it is difficult to give priority to higher education in allocation of public spending when the country is yet to achieve adequate access and quality at the primary and secondary levels of education for all sections of the society. Therefore, one of the important policy responses should be the adoption of a more rational approach to financing education and allocation of public subsidies within the education system. The bias in public spending towards higher education coupled with unplanned expansion in response to political pressures has made the education system fiscally unsustainable. One of the serious consequences has been decline in quality of education at all levels. Given relatively higher social returns at lower levels of education and over representation of the well-off sections of the society in higher education, high level subsidy to higher education is not only an inefficient educational investment but also regressive public spending.

Therefore, the objective of policy should be to bring down the growth rate of higher education to a more realistic, fiscally sustainable level, and to ensure equity, and efficiency in public spending. The underpinnings of such growth should be an incremental increase in share of private costs in total costs with the level of education and removal of labour market distortions. This would permit efficiency in allocation of public expenditure between different levels of education, improvement in equity and quality of education, and a financially viable expansion of higher education.

The experience of some countries suggests that it is possible to achieve a well functioning, diversified, flexible and growing higher education even as public expenditure per student declines (*World Bank,* 1994). This would require changes in development strategy, labour market incentive structure, and adoption of sectoral approach to balanced development of education system and some specific reforms pertaining to higher education.

There is a two-way relationship between education system and processes of development operating in a country. In contrast to a centralised development strategy with focus on modern industry that creates an inbuilt tendency in public spending in favour of higher education at the cost of basic education, participative broad-based decentralized development strategy has an inbuilt check against such a tendency (*Dhesi,* 1996*c*). Because of grassroot level involvement of population in decision making, basic education gets its due priority in public spending. Needless to say, good quality basic education is the basis of quality higher education that can make a meaningful contribution to the socio-economic and technological development of society (*Psacharopoulos*, 1995). Further, with such a development strategy, income gaps between modern and traditional sectors are likely to remain narrow. This would ensure a more realistic appraisal of the prospective benefits of education by students.

In addition, institutional structure should be modified to ensure that the economic system does not exaggerate the educational prerequisites to employment. For this it is necessary that minimum job specifications do not overvalue education. The incentive structure should be such that there is no gain to students in being excessively qualified for jobs they aspire for. More specifically, public sector, the main employer of the educated, should eliminate allocation of jobs by credentialization. Second, wages should be linked to jobs and not to educational attainments. These measures are essentially interim till other policies become effective. However, so long as over-education is increasing and those emerging from the system must accept jobs requiring progressively lower educational qualifications, the tendency particularly in teaching and civil service to link salaries to levels of education simply increases rates of overpayment. This eventually induces even more students to follow the same privately profitable but socially costly path.

Regarding specific reforms pertaining to higher education, the forms of change should be in four directions : greater differentiation of higher education institutions, diversification of funding sources for public higher education, redefinition of role of the state in higher education with greater emphasis on institutional autonomy and accountability, and introduction of policies explicitly designed to give priority to quality and equity objectives.

The increased diversity of institutions, types and duration of courses lend flexibility to the system to take into account the varied capabilities of potential entrants into the system thus enhancing its capacity to cope with excess demand and the mismatch between demand and supply of the educated. This can lower the average cost per student without affecting quality. The present excessive enrolment in liberal arts and humanities turning out graduates with low employment probabilities can also be moderated. Therefore, policies should encourage institutions to adjust their objectives and programmes in accordance with the emerging labour market conditions and to allocate students among fields of study and institutions according to ability and type of higher education desired — traditional academic, vocational, short cycle, distance learning, full-time, part time and so on. The institutions should enjoy greater autonomy in setting and applying admission criteria and in offering programmes. In general, policies should foster competition between institutions to stimulate the development of high quality programmes to attract students and funding. This will force them to continually assess their strong and weak points and define their objectives, market niche, and clients on the basis of their comparative advantage. Under the circumstances, institutions would pay attention to labour market signals and social demand in setting solution and performance criteria for students. Only such a flexible higher education system would help manage the trade offs between quality and quantity, efficiency and access for disadvantaged, and social harmony.

The second recommended change is with regard to financing of higher education to cope with growing excess demand and scarcity of resources. Given varied claims to limited fiscal resources sources of funding have to be diversified. The system should neither preclude private funding nor it should be completely market driven and profit-oriented in view of equity and efficiency considerations. So a balance between public and private financing has to be determined. In this respect, the price elasticity of demand for different groups can be the guiding principle for recovering costs. However, to make sure that no qualified student is left out, an adequate programme of scholarships, bursaries, loans and grants to assist those in need and qualified to receive them can offset potential inequities.

Third, given long gestation and considerable investment in education, there is need to develop mechanisms to assess future needs for setting priorities. However, with rapid technological, and socio-economic changes future becoming increasingly uncertain, manpower planning has to be broad and open ended in many ways. There is always scope for substitution and adaptation over time. Therefore, flexible or adaptable skills backed by programmes of remedial training may be the answer.

Finally, there is need for change in access policies. Because of limited resources, open access policy and unplanned expansion in response to political pressure have led to decline in quality of education and to structural inequities as well as inefficiencies. The bias in public spending in favour of higher education has created excess demand. In face of secure resource constraint, the institutional response has been to ration places. Equity considerations apart, the growing importance of high quality trained manpower in determining future international competitiveness also underlines the need to have fair and efficient selection policies.

Indeed, the choice of access policies has implications for equity, quality and efficiency. Inappropriate policies may produce repetition, dropout, and waste in addition to introducing bias in social selectivity. In general access policies should satisfy the tenets of quality and equity by selecting the most able students and of efficiency by maximizing the quality of educational results per unit of costs. Access policies must also encourage institutions to respond to demand for different types of higher education by different social and ability groups, and labour market conditions. Care should be taken to ensure that selection instruments are valid predictions of ability to learn. The emphasis should be on measuring reasoning, problem solving skills and aptitudes for particular training rather than rote memorization.

Preferential selection, as an instrument of broadening the social base of participation and remedying the inbuilt bias in selectivity, is socially acceptable if the effect on total places awarded is marginal and no qualified student is excluded. However, quality considerations suggest that preferential selection must be accompanied by sustained instructional and remedial courses to help disadvantaged students reach the same standard as the other students.

Yet it needs to be emphasized that unequal access to higher education reflects deficiencies at lower levels of the education system. Therefore, preferential policies and remedial action at the university level may not be the most effective method of reducing inequities arising from disparities in access and quality of schooling.

[This paper arises from an ICSSR funded project, "A Quantitative Analysis of Demand for Higher Education."]

Notes

1. The findings of Tan and Mingat (1992) are also briefly discussed in Dhesi (1996, Forthcoming, *a*)
2. This analysis broadly applies to most of the LDCs (*Todaro*, 1982).

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Government Subsidies on Education in India

A Critique of the White Paper of the Ministry of Finance, May 1997

Francis Soundararaj*

Substance of the White Paper

The white paper, *Government Subsidies in India* of the Ministry of Finance makes a case for reducing government subsidies paid to 'non-merit' goods (higher education is one) from 90% to 50% in the next three years and to 25% in the following two years. The main argument for singling out higher education for reduction of subsidy, the paper affirms, is that it is a 'non-merit' good. An attempt is made here to (a) summarise the main arguments put forward for such a course of action, (b) provide a background to it, and (c) offer a criticism of the proposal.

Arguments for reducing subsidy on higher education

The white paper classifies all goods into three categories: 'merit', 'public' and 'non-merit'. Merit goods are defined as those which have substantial "externalities", i.e. gains enjoyed by the wider public from subsidised services are in excess of private gains. "For example, the private benefits of research and development for the firms involved may not justify a large expenditure by those firms, but the overall technological progress made in the process may have larger benefits for the economy as a whole."[1] Those goods which meet basic needs and benefit the masses are also placed under the 'merit' category. "These include... primary education, public health, sewerage and sanitation, many social welfare schemes, soil and water conservation, agricultural research, flood control and drainage, roads and bridges, and various scientific research projects."[2] 'Public goods' have two characteristics : (a) they benefit all; and (b) consumption of such goods by any one section does not affect that of others. None is deprived of them. Subsidies on defence and general administration are some examples of 'public goods'. All the rest are categorised as 'non-merit' goods. Health and higher education subsidies 'exhibit a non-rural and pro-rich bias' and these are classified as 'non-merit goods'. They are consumed by the rich, says the paper, and the poor are deprived of their use.

Arguments for subsidising 'public' and 'merit' goods

Several arguments are advanced to justify subsidies for 'merit goods'. In the first place, they do not contribute, it is said, to the fiscal deficit as non-merit goods do. They have externalities, i.e. the private-user gain is less than the benefits to the public at large. Subsidies control their pricing. They meet the needs of the public. Consumption by any one section does not deprive the benefits of another. Receivable returns are higher than for non-merit goods. There is greater control and monitoring, and consequently, less wastage. Subsidies do not dissipate as monitoring is possible. As for 'public goods' pricing is not possible, as externalities are not measurable.

Arguments for not subsidising 'non-merit' goods

They do not have significant externalities. Subsidy on higher education, for instance, benefits the rich, it is said, and it takes away the money which, otherwise, could be spent on the poor for other benefits. They promote inefficiency. For instance, subsidies on electricity, water and diesel lead to wasteful use because they are priced below market rates. Health subsidies are reportedly utilized more by the affluent than by the poor to a large extent. They result in the economic effect of 'undesirable distribution'. As subsidies on non-merit goods are made directly off the budget, they contribute to a greater volume of fiscal deficit than on other goods. The recovery rates (i.e. fees and other charges received) are considerably low. Aggregate budget-based subsidies for non-merit goods constitute 10.7% of the GDP at market prices whereas those for merit goods constitute 3.69%.[3]

Arguments against subsidising higher education

As stated earlier, elementary education is said to deserve subsidies because the "benefits of providing elementary education spread well beyond the immediate recipients, and hence it is taken as a merit good".[4] "Education beyond the elementary level falls outside the ambit of merit category".[5] On the contrary, higher education is a non-merit good. Elsewhere in the paper, however, education, in general, is classified as 'social service' and justified for subsidies because it "improves occupational mobility, and

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voluntary compliance law and social responsibilities."[6] Higher education is a 'non-merit good' because "most subsidies to higher education accrue predominantly to the better-off sections of society as they have an overwhelming advantage in competing out prospective candidates from the poorer sections in getting admission to courses that are characterised by scarcity of seats."[7] The paper reaffirms,"A significant portion of subsidies on higher education is appropriated by the middle and high income groups, because shortages of seats in this sector are cleared by a quality-based screening in the shape of entrance examinations, interview, group discussion, etc, where the poorer sections of society are easily competed out."[8] When subsidies are increased for non-merit goods which do not have large externalities, the efficiency of the overall economic system suffers. The justification of such subsidies as "being conducive to long term economic growth" "can be based on false or outmoded premises."[9]

Inferences

The average all India recovery rate for non-merit goods/services (of which higher education is one) is just 10.3% of GDP, implying a subsidy rate of just below 90%.[10] "The recovery rate as a whole in this sector is less than 1 per cent. The recovery rate even in the university sector is as low as 1.25 per cent."[11]

Benefits of input subsidies are easily dispersed to non-target population (i.e. the well-to-do and the rich). A significant portion of subsidies in higher education is appropriated by middle to high income groups.

Subsidies on non-merit goods and services induce wastage and promote inefficiency.

Proposals

Reduce the volume of subsidies to reduce fiscal deficit. Make subsidies as transparent as possible (i.e. in the case of higher education it is not so.)

Use subsidies for well-defined economic objectives. Raise consumer costs in higher education.

Focus subsidies to final goods and services with a view to maximising their impact on the target population at minimum cost.[12]

Prospect

If the rate of subsidy could be brought down to 50%, the subsidies on non-merit goods and services would drop from 10.7% of GDP to about 6% of GDP. The fiscal deficit will drop from 6.5% to less than 2% of GDP. Subsidy rate for non-merit goods may be reduced from 90% to 50% in three years and to 25% in another two years. Naturally the user cost will go up and tax revenue will increase. Higher education will cost more to consumers.[13]

Indian Higher Education

The problems of education are far too wide and complex to be solved by sophistications of economic theory. One can easily perceive them to be the cause of the formulation of the white paper. They form the backdrop of the present strategy to reduce subsidies on higher education.

The problem of numbers

India's higher educational enterprise is the biggest in the world. There are more than 9500 colleges and 240 universities. It costs the exchequer more than 95% of the subsidy on higher education to maintain this massive structure by paying teachers' salaries and other grants. This is the minimum required to keep the enterprise alive, let alone kicking and dynamic. The progressive cut in the allocation of funds for higher education through the last three to four plan periods has made subsistence precarious. Higher education is starved by under-funding. The demands on the Finance Ministry keep increasing because of periodical increases in salaries and allowances, escalation of costs, wastage and other factors. Already the tottering structure has no option but to lean on the staff of private enterprise. Institutions of higher learning in the private sector have already outnumbered those in the public and quasi-public sectors. In Tamil Nadu alone there are more than 270 self-financing colleges as against about 120 aided and 70 government institutions. The progressive decline of government assistance both at the centre and the states to higher education has thus led to a situation which cannot be avoided. New courses and new colleges are totally financed by the agencies which have started them. There is no public support for them. Whether one likes it or not, one cannot wish away the self-financing institutions as they have come to stay. It has become the responsibility of governments, therefore, to organize this unorganized sector. Leaving it unorganised and drying up subsidies to existing public institutions will bring chaos upon the higher education scenario in the country.

Fluidity of the Private Sector, its misuse and prospect

The sudden shift to an alternative system in the private sector caused, among other things, by political decisions for not often justifiable reasons (hundreds of institutions are given permission to start courses and colleges without adequate infrastructure or faculty), and by the need for expansion of higher education because of democratisation of education and the constitutional guarantee for it, has led to many problems in the private sector. The investment in the private sector by educational agencies mainly for undue material gain has led to commercialisation and to high cost of higher education. Unscrupulous monetary transactions surreptitiously encouraged by governments have led to stigmatisation of these institutions. They have failed, in many cases, to provide adequate infrastructure, salaries and other conveniences. Thus it happens that the emerging alternative to public enterprise in higher education, which has the potential to offer quality education through the financial autonomy it enjoys, has become tainted. Yet, with the dwindling of resources for the public enterprise, the private sector alone holds the key to the problem of higher education in our country. It may not be easy to organize and regulate the sector with hectoring legislations aimed at curbing their financial and administrative autonomy. Where it is attempted the alternative will be crippled. It becomes easier if the quality of education provided by self-financing institutions is ensured by proper academic monitoring. As universities cannot do this for obvious reasons, the state ought to adopt an enlightened approach by paradoxically promoting academic autonomy and quality control. Such an approach, rather than an uncritical and unimaginative condemnation of all self-financing institutions, can alone help preserve and promote higher education in the country. This emerging alternative must be exploited fully for social benefit.

The second problem of the private sector which makes the shift from public enterprise to private enterprise in education is the cost factor. Where subsidies are not received, pricing of higher education in the private sector, has to be necessarily higher than that in the public sector. Consumers of higher education do not often perceive it that way. Even a conservative estimate of actual costs of running an educational institution for offering five courses at the undergraduate level for 30 students in each through three years (with optimum facilities for the learners and UGC salaries for faculty) requires a per capita cost of Rs. 15,000 a year. Consumers would consider this as either exploitative or unaffordable. Only those who can afford it will take advantage of even a quality programme and many cannot. The private sector has thus become elitist, not by choice, but by force of circumstances. It is the necessity of the hour to make it sensitive to social need and gear it towards the advantage of the targeted population. It is here the policy of subsidy has relevance. Given the quality stamp in self-financing institutions (by means of academic autonomy and quality control) consumer subsidies may be transferred from public enterprise in education to the private sector especially for the poor and the economically backward. By this means control, monitoring, avoidance of leakage and wastage may be achieved and pricing becomes transparent and reliable. On the other hand, leaving the private sector unorganised, as it is today, and simultaneously withdrawing or reducing subsidy to public enterprise in education will pull down higher education to its non-performance and eventual ruin. This does not at all mean that commercialisation of education in the private market ought to be left undeterred.

The Problems of Higher Education in the Public Sector

Higher education, in general, has become outmoded in our country. The plying of an age-old British curriculum which is no longer current even in the West, unproductive pedagogic methods adopted and maintained without result which is socially beneficial, absence of goals and philosophies sensitive to post-colonial India and several other ills have brought the corpus of higher education to its terminal clinical condition. We only have to watch the patient die. If we fail to retrieve it with last-minute surgery we may have to miss the race in the global arena of education. The affiliating system has added to the gravity of the situation. Non-academic and unacademic pressures caused by unions together with the negative attitude to autonomy and self-financing courses and colleges have not been helpful to salvage the system. The system has become non-functional and its products non-employable and non-educated. The subsidy on education received by these unfortunate colleges in the public sector, and by the universities, is hardly enough to pay salaries which constitute more than 95% of the subsidy. It appears reasonable to withdraw or reduce subsidy to such a non-functional system. That, however, is no remedy to serve the cause of higher education. It is like administering euthanasia to a hopeless clinical case. We cannot afford to throw away what we have bequeathed and what we cannot do without. There is a case for saving the system by educational reform. Curricular restructuration, vocationalisation, examination reform and pedagogic renewal through new methods of assessment and teaching and nexus with the neighbourhood are some of the reforms which the UGC has initiated. With the meagre subsidy given to public sector colleges, it is difficult to attempt such a holistic revival. The problems of higher education in the public sector are many indeed. Only two options are open: reduce subsidy and face the annihilation of the system or continue to support it along with encouragement towards a holistic academic revival. The option to survive is available only on this condition.

The problems mentioned in this section account for the unproductive expenditure on education. The problem of numbers, the difficulty to shift to a private sector enterprise without preparation and the plying of an outmoded system of education not made for us are perhaps at the back of the mind of the framers of the white paper. It is not desirable to run away from them by refusing to spend on education letting the consumers pay a price they cannot afford. Terminal sicknesses often cost more; it is very much so in the case of higher education which remains vulnerable and has failed to deliver goods. It becomes the responsibility and concern of the state to step up reform within a time frame by not only allowing subsidies to continue but by spending more to save the system.

Critical Review of the White Paper

The arguments advanced in the white paper to reduce subsidy on higher education are flawed on more than one count.

The basic flaw in reasoning

Jaques Derida, one of the most influential philosophers of our time, has advanced the theory of deconstruction in his writings on the philosophy of language. He has brilliantly drawn attention to the basic flaw in human reasoning. The flaw arises because of setting up dichotomies. Almost all reasoning rests upon split binary options. Such dichotomies as spiritual-material, good-evil, truth-untruth, classical-modern, and a host of others dominate human reasoning. In the process we often privilege one arm of the dichotomy and reject the other altogether. This leads to substance falling between two stools while we furiously go on dodging it by setting up more and more dichotomies. Hence it is necessary to 'deconstruct' our normal reasoning and arguments which are based on dichotomies and expose their vulnerability. This applies to the fiscal reasoning bolstered in the white paper. It sets up a shocking dichotomy between 'merit' and 'non-merit' goods in which 'merit' is privileged and 'non-merit' is rejected. The rejection is based on such other dichotomies as public gain-private gain, pricing-non pricing, supply-demand, input-output, targeted-untargeted and others. Such a course of reasoning refuses to find truth in the limbo between the two arms of dichotomies.

Inconsistencies

This leads to many inconsistencies in the argument put forward. The inability to subsume all goods under 'merit' and 'non-merit' categories has constituted the residual 'public good' which is clumsily handled. Public goods are dropped from the main argument without explanation. "In the case of public goods like national defence, it is difficult to assess the benefits as well as the demand for such services. As a result, normal market pricing mechanism breaks down completely in such cases."[14] This clumsiness has arisen because of setting up the dichotomy between pricing and non-pricing. Fiscal reasoning has failed to provide an answer. Another internal inconsistency which arises out of the main dichotomy is the justification of some intangibles and the rejection of others. Whereas the advantages of defence are bolstered (perhaps, for reasons of political expediency) those of higher education are guillotined. Another dichotomy which causes another internal inconsistency is that between elementary and higher education. Dichotomising education has left middle and secondary education out of consideration. They fall between two stools. This inconsistency is well portrayed by Binod Khadria, "Technical education and expertise go into economic merit goods listed in the white paper such as agricultural research, space research, etc... These are the direct results of the efforts put in by persons who have had university education." "How else," he asks, "could the state expect personnel having the merit good of elementary education alone undertake any of these activities which generate substantial externalities?"[15] This is true of a large number of goods which have externalities impossible for them to achieve but for higher education. The Green Revolution, rocketry, defence missiles, technology transfer, Operation Blackboard and all other advancements owe, primarily to higher education, their fruits and advantages to the masses. Another internal inconsistency pointed out by Binod Khadria deserves to be quoted in full. "One of the vital inputs for elementary education (often occupying more than 90 per cent of its all input space), viz. qualified and/or trained teachers, is the output of the higher education system. In subsidising elementary education, the government, therefore, cannot possibly afford to restrict the production of elementary school teachers by glossing over the importance of higher education by calling it a non-merit good."[16] He warns that curtailment of subsidy for higher education will result in unemployment of college teachers who cannot be absorbed into the elementary system because of saturation in that sector.

Criteria for determining merit Good flawed

Three criteria are adopted to label higher education as a 'non-merit' good. (a) It does not have externalities. (b) it benefits a non-targeted population and deprives the targeted population of them. (c) It does not meet basic needs. The first has already been shown to be erroneous. All the expertise that goes into merit goods via research and development is the product of higher education. Hence it produces externalities in merit goods. The second criterion dealing with the deprivation of the benefits of higher education to the masses is false. Nearly 70% of subsidised higher education is enjoyed by lower income groups. Reserved categories account for 69% of the seats available in higher education in some states. Do we categorize them as 'rich' and, therefore, 'untargeted'? Even technical education is available to them on the same basis. To slander merit as a means of 'competing out' the poorer sections of society is not acceptable. The fault is not so much in screening as in the failure of education to equip all to rise to the demands of merit. It is all the more reasonable, therefore, to increase subsidy for remedial work in colleges and universities. To reject higher education as non-beneficial to the targeted population, because such benefits are not visible for pricing, is like saying that a gun does not fire a target because the flight of the bullet is invisible. The third criterion is naive. Many avenues of employment are open only to graduates. If elementary education alone has to be maintained, many cannot find employment in banks, universities and many other institutions and sectors which require graduates. If higher education is understood as not meeting basic needs, then, the question arises as to what is a basic need. Is it a 'square meal' a day, or something more to live with minimum comforts? If it is the former, one can obtain it without elementary education. If it is the latter, elementary education cannot obtain it. All avenues of employment which help one meet minimum needs require a school-final qualification. If subsidies are reduced beyond the elementary level, how can secondary or higher secondary education be supported when it is the minimum requirement for bare subsistence? Hence all three criteria supported by fiscal reasons do not stand the test of common sense.

The question of recovery

Recovery is full in all economic spheres, whether subsidised or not, Loans are recovered in full with interest, for instance. Where they are not recovered we call the phenomenon "subsidy", and not "recovery". Something cannot be both subsidy and recovery. Where the recovery is not full, that which is not recovered is called a discount or a waiver or a writing-off. Applying such a reasoning to the visible fiscal returns from higher education in the form of fees and other receipts, one may ask whether these amount to "recovery". Payment for services is not "recovery" but "returns". They are not obligatory. To classify them as "recovery" is artificial although it may serve a verbal fiscal exercise. What is subsidised by the state for social well-being is not recovered as in the case of many 'public' inputs. Human resources and material goods cannot be treated on equal terms notwithstanding fiscal deficit. This makes it clear that higher education is a 'public good', not a 'non-merit good'.

As a result of fractured reasoning the arguments behind the white paper move within the framework of fiscal myths which do not serve social reality. Reduction or withdrawal of subsidy on the basis of these arguments is not only unfair but it will harm higher education.

Inferences and Suggestions

Dichotomising goods as 'merit' and 'non-merit' is erroneous and it is not tenable even on fiscal terms because of several inconsistencies which arise from such dichotomising.

Higher education is not a 'non-metit' good because it is crucial for producing externalities in merit goods. It also serves targeted populations by meeting minimum needs.

Withdrawal or reduction of subsidy cannot be justified unless and until the state has given a fair trial to the non-functional system of higher education through a quality drive and educational reform.

Viewing fiscal deficit as a pure economic factor divorced from the realities of human resource development and axing the latter on the basis of half-formed or ill-formed criteria are not fair.

Letting the emerging private enterprise drift without organising and quality orientation entails the danger of losing this alternative which has tremendous potential for educational development which cannot be delayed in the context of global progress in education.

The whole concept of subsidy on higher education ought to be reviewed in the light of the observations and inferences available in the reasoning of educationists in the country.

The private sector ought to be organized and made sensitive to global quality needs and national reconstruction in the field of education.

The public sector may be given a fair trial after the state has initiated a programme of educational reform. To withdraw or reduce subsidy at this stage from public institutions of higher learning without preparing an alternative is suicidal. The educational enterprise in the country will come to a grinding halt.

Fiscal deficit may not be viewed on fiscal terms alone especially where human resources are concerned. Reliable pricing mechanisms may be devised to reflect invisible contributions made by higher education to externalities of merit goods

It is ideal to involve educationists, educational administrators, fiscal experts and planners together in the present debate. Until a consensus is arrived fiscal decisions may be deferred.

End Notes

1 Government of India, Ministry of Finance, *Government Subsidies in India*, May 1997, 2.2., p. 4.

2 *ibid* , 3.3., p.6

3 *ibid* , Table 3, p.11.

4. *ibid.*, 3.3, p.6

5. *loc.cit*

6. *ibid* , 6.5., p 12.

7. *ibid.*, 7.5 , p 15.

8. *ibid* 8.3., p 16.

9. *ibid.*, 2.4., p 4.

10 *ibid* , 8 1 , p.15.

11 *ibid* , 6.5 , p.12.

12. *ibid* , 8.5., p.16

13. *ibid* , 8 7 , p.16.

14. *ibid.*, 2.3 , p 4

15 Binod Khadria, *The Hindu folio*, 1/2, March, 1998.

16 *ibid* , folio, 1/3.

Higher Education — A Non Merit Good (?)

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volving fund which will, hopefully, be self sustaining in the long run.

To conclude, it is difficult to agree to the contention made in the paper that education beyond the elementary stage is a 'non-merit good.' Education is a continuum and each stage of education is the *sine qua non* of the progress of other stages. In fact, the various stages of education are complementary to one another and not competitive. The premise that higher education is the prerogative of the elitist groups, who elbow out the weaker sections of the society, does not stand closer scrutiny. The reservation policies adopted by the central and state governments are potent enough to ensure that the weaker sections are given their due not only in admissions to various institutions but also in employment. Further, although scientific and technological research has been included in the category of 'merit' goods, it is difficult to believe that research can prosper if the feeder institutions are deprived of financial sustenance. It may be mentioned that in spite of massive inputs in research — India, as also other developing countries, stand no comparison with the developed countries by way of research output.

The suggestion about reducing subsidies is worth serious consideration. It is, however, necessary that the withdrawal of subsidies and the enhancement of cost recoveries should not hamper the induction of meritorious but economically weaker sections of the society into institutions of higher education. In order to remove this lacuna, a differential fee system backed by a massive programme of loan scholarships has been suggested. It is also necessary that unplanned institutional proliferation and unabated expansion of student enrolment should be resolutely and effectively curbed.

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6. Jamil Salmi & Adriaan M. Verspoor, ed. *op. cit*. p. 113.

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Higher Education in a Developing Society
An Essential Merit Good

M.R. Kurup*
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New Growth Theories and Higher Education

The conventional neo-classical theory of growth had held that economic growth was the result of accumulation of physical capital and an expansion of the labour force, combined with an exogenous factor like technological progress, that makes capital and labour more productive. But it could not explain how to accelerate the technological progress.

During the late 1980s and early 1990s, new theories of economic growth underpinned the human development position, that the real motive force of economic progress is people. Developed by eminent economists like Paul Romer and Robert Lucas, these theories have tested the effects of human capital on long term growth rates of countries. In the new theories, what increase productivity are not an exogenous factor, but endogenous ones, related to the behaviour of people, responsible for the accumulation of productive factors and knowledge. *Significantly, this behaviour can be changed by policy.* Some of the new models argue that one of the crucial variables is an across the board increase in human capital. Others argue that the key source of productivity growth is research and development (R & D), though this too depends on human capital.

The human capital models show how education allows the whole production process to benefit from "positive externalities". Educated people use capital more efficiently, resulting in improvement in productivity. Education also helps to devise new and better forms of production through innovation. Moreover, they spread the benefits to their co-workers, who in turn become more productive. Thus the rising level of education causes a rise in the efficiency of all factors of production. This helps explain part of the disparity in income between the rich and the poor countries. It also partly explains why poor countries like India are not catching up with the advanced ones. India has failed to spend even the promised 6 per cent of GDP on human capital development that can augment productivity and enable the workforce to adopt front-line technologies. In any case, the less developed countries lack financial resources — domestic savings and external assistance — and therefore ought to concerntrate on human resources.

The spillover benefit of higher education also helps account for certain important aspects of relationship between economic growth and physical capital. In the past, growth theories assumed that capital has diminishing marginal returnes; that as more capital is accumulated, overall efficiency and growth rates will decline. But empirical evidence in many countries has disproved the hypothesis. The human capital model helps to explain as to how decreasing marginal returns to physical capital are offset by increased human capital efficiency acquired through higher education.

The new growth theories have important policy implications, since they suggest that growth could be stimulated by undertaking public investment in improving human capital and research and development. Hence, it can be argued that human resource development, right from primary to higher levels, ought to be treated as a continuum, with a first a claim on the state's resources. Countries like Japan and South Korea, for instance, have attained the status of miracle economies, largely due to MFE (most favoured expenditure) treatment accorded to education by the government. The role of high levels of human development in attaining high rates of real economic growth is undeniable.

A New Measure of National Wealth

The World Bank is experimenting with a new measure of national wealth. According to the Bank's assessment of 192 countries, while *physical capital* and *natural wealth* accounted for 16 and 20 per cent of the total wealth of the country respectively, the *human capital* is estimated to account for the remaining 64 per cent of the wealth! The dominance of human capital is particularly marked in high-income countries. In Germany, Japan and Switzerland, it accounts for as much as 80% of the total capital. On the other side, in sub-Saharan Africa, where human resources are very poorly developed more than half of the national wealth is still in the form of natural resources. This also explains the great divide between rich and poor countries.

The Bank has also begun to apply a mechanism of assessing whether total wealth is rising or falling.

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This measure of sustainability is called "genuine saving". It would show what a country adds to or subtracts from its net worth. From the output, the measure subtracts consumption, depreciation of physical capital and net depletion of natural resources. Depletion of human capital unfortunately is not included largely for want of appropriate data. The countries with the best record include Hong Kong, Japan, South Korea and Singapore. Indeed, East Asia has had a rapidly increasing genuine savings rate, estimated to be around 15% of GNP, since the early 1980s. At the other end of the scale sub-Saharan Africa has been dissaving at 13% of GNP, since the late 1970s.

In the light of the measures of national wealth relating to different countries, it is crystal clear that higher education does make a positive and significant contribution to the nation's social and economic progress. Besides, alleviating poverty and reducing income disparity, an investment in higher education is an investment in the future of the country.

Impact on Development of Technology and Skills

India's perennial dependence on the key inputs like technology and capital goods has weakened the bargaining strength in the international market. Our fragile R & D base has not only led to secular deterioration in the terms of trade, but has also put us in the most unfavourable situation since outdated as well as hazardous technologies are dumped into India in return for huge royalty. The terms of trade would tend to move from primary to manufactured goods, i.e. in favour of industrially advanced nations. Further, trade data reveal that manufacturing accounts for more than 70% of world merchandise trade at present. Even within manufacturing, skills-intensive products have an uper hand. The North's (developed world), exports to South (developing world) have a greater skill content than its imports from the South. Even in services, the North tends to export skill-intensive products, such as insurance design, medical care etc against South's export of labour intensive services like shipping, tourism, routine data processing, to mention some. This also explains why the US is insisting on globalization of the highly protected insurance industry of India.

The development of R & D has a number of spillover effects. In the process of developing a certain product or improving production techniques, scientists and technicians are stimulated. New applications are discovered further motivating research in universities and other institutions. A rational attitude towards experimenting will be fostered; competent scientists will be trained, which will have positive effects on the intellectual climate of the country. It would provide inducement to scientists to work with better equipment and in more congenial surroundings. Linking institutions of higher learning with industry would further foster the quality of R & D and manpower training. This may also discourage brain drain.

Even war is now fought through the medium of information technology (IT). Excellence in computer technology is possible only after a mandatory level of higher education. Further, India has already attained excellence in software development, which should be consolidated further to improve our stake in the global market. We must strive to "plug into" the global system of services networks currently being developed in industrialized countries. However, the key is not to plug-in passively, but actively as a full participant, in order to meet our technological, economic and social needs. The importance of telematics for the development of our producer services needs no emphasis.

With the World Trade Organization (WTO) becoming fully operational by 2005, if will be difficult for India to survive as a major Nation without developing its own intellectual base. Free flow of mass-produced goods and services from multi-national corporations will destroy the Indian enterprise. Since the Intellectual Property Right (IPR) is overwhelmingly in favour of advanced countries, any neglect of higher education would culminate in digging our own grave. Those who are rushing to declare higher education as a non-merit good should pause for a moment before the misadventure.

Quality of Higher Education

It is argued that in India, quality and social relevance of higher education imparted in our institutions, is quite low and hence, expenditure on higher education appears to be unproductive and a burden on the Treasury. It is pertinent to note that the kind of training imparted in colleges equips our students to work most efficiently as scientists, technologists, engineers, software experts, economists, doctors etc in foreign countires. It is found that Indians work most efficiently outside the country than inside, largely due to poor quality of work culture and environment in India. Most of the brain drain takes place for want of better opportunities, conducive work environment or appropriate infrastructure.

Secondly, for improving the quality and relevance of higher education, what is crucially needed is a sizeable flow of resources, physical, human and financial into higher education. This will bring in the kind of inputs like project work, field visits, on the job-training etc, that are necessary to expose the students to reality. The required inputs and resources should come through government funding, in low income countries. It is equally desirable to stipulate an optimum teacher-students ratio per faculty, to enable the teacher to concentrate on quality.

Higher education in India, however, is apparently caught in a vicious circle of poverty of resources. Because resources are poor, the quality and social relevance of higher education are very low, and therefore, it faces a resource crunch. Education appears to have become a residual sector for resource allocation. Moreover, the axe tends to fall first on education, whenever the government is faced with paucity of funds. That colleges started in Maharashtra on temporarily unaided basis since 1983, is a classic case. These colleges ought to have been brought on the grant-in-aid scheme in June 1986 or thereafter depending on the expiry of the stipulated 3 years unaided span. The government failed to fulfil its obligation on the pretext of lack of resources. As a result majority of such colleges remained ill-equipped offering substandard education.

The Education Policy of 1986, *inter alia*, has proposed a contraction of the base of higher education, through restricted merit based admissions to colleges and universities, in addition to delinking degrees from jobs. This policy, though *prima facie* appears sound, however, ignores certain fundamental characteristics of a developing economy, with a huge population and rising unemployment. With economic development, there would take place social, cultural and attitudinal changes, leading to an increased demand for higher education. This is borne out by the vast difference in the enrolment ratios of relevant age group of population between developing and developed countries. For instance, while these ratios in Pakistan, Burma and India are 2, 5 and 9, they are 38, 44 and 57 for Sweden, Canada and USA respectively. The demographic implications of a country like India will further add to the burgeoning demand for all types of higher education.

The acceptance of primary-secondary education as a "fundamental right", will considerably accelerate the demand for higher education. Since job opportunities are limited, a significant portion of those who complete secondary education would prefer to carry on with higher education. A policy of free education upto graduation for girls, is also on the anvil. Further, it is a policy of many a state government to have at least one college in each taluka place, despite the fact that the number of students in a majority of degree colleges in the rural areas is below 400, and therefore, non-viable. Also 95% of the students in such colleges do not pay fees, as they come under either social or economic backward classes, which are exempted categories. It is a paradox to throw open the portals of colleges to the poor as a benevolent social policy, and subsequently to back out from financing their education.

Empirical evidence, the world over, supports a very high correlation between educational levels and rates of socio-economic developement. It is in the interest of the country that the growing learning needs of the population be met by the educational system, rather than be discouraged. Further, instead of the proposed delinking of degrees from jobs, it is imperative to make education, as far as feasible, skill forming particularly for the low-income groups. To the rich, higher education could be an intellectual exercise, but the poor look at higher education, as a source of livelihood. The separation of jobs from degrees could even be counter productive, as the unemployed graduates and post-graduates, will compete for low paid clerical jobs, which need little of collegiate education.

It is pertinent to note that the percentage of students receiving higher education belonging to the middle and upper income groups has declined from about 90% during the 1960s to 80% by 1990s. The trend is likely to continue. It is a fact that more and more students from economically and socially weaker sections are entering the portals of higher education, largely due to government subsidy. Hence any restriction on availability of seats would adversely affect the poor and lower income groups who cannot pay the market price. Higher Education in India cannot exclusively be a private good. It has to be largely a public good, since majority of people are poor.

It is time for policy statements on higher education to be made jargonfree The policy makers should climb down from their ivory tower abode to the realities of the society. A futuristic policy on higher education has a lot to take care of. It is an investment on nation building and, therefore, should examine the extent of resource crunch faced by educational institutions. It should be based on the quantity of present and expected demand for and supply of seats, and the desired quality of higher learning. The cost of providing different types of higher education and the mode of its sharing between the individual and the society should be appropriately calculated, keeping in view the equity goal and the relative paying capacity of students. The current pricing models for higher education, in the context of its quantitative and qualitative expectation, need an urgent revision.

In one of our studies, the extent of resource crunch faced by general education colleges in the state of Maharashtra, was measured. Among various indices of resource shortage, we computed an index, indicating the share of capital expenditure to total expenditure, as well as the net addition to total stock of capital. For the colleges as a whole, we found that this ratio was abysmally low at 0.0768 indicating extremely low level of capital formation in the general educational colleges in Maharashtra. Since the colleges did not report depreciation rates for capital assets, we were not in a position to arrive at the net capital formation. Figures of net capital formation would have been more useful for ascertaining the impact of resource scarcity. According to informed sources, since income from the college is not taxed, depreciation as a national expenditure, is not calculated. This being the case, depreciation of old capital stock of institutions is seldom estimated and no funds are provided for replacement. The resource scarcity is so daunting in this field that even recurring cost is not met by total receipts, leading to huge real deficits, to the tune of almost 80 to 90 per cent of the total recurring expenditure. This is expected to be borne largely by the society. It is obvious that capital expenditure is a miniscule portion of the total expenditure for all types of insitutions, whether achiever or nonachiever. It is no exaggeration to say that the situation is close to zero or negative, if expressed in terms of net capital formation. The resource scarcity definitely has undesirable repercussion on quality of higher education.

Higher Education as a Lifelong Pursuit

The idea that education should last the life of an individual is by no means new. Even writings in both Middle Ages and during ancient times, often stressed the importance of continuing to learn throughout the adult life. Life long education is thus in principle an old idea. Nonetheless, it seems that there are special conditions of modern life which give it a new urgency. These arise out of what Coombs called the "crises" of modern education. The dimensions of this crises include emergence of new learning needs as a result of changing patterns of work, recreation, the nature of job qualifications, increased emphasis on the contribution of education to self-fulfilment or a recognition that democratization of education and equality of opportunitycannot be achieved if systematic support to learning is confind to childhood only. The reasons why learning in adult years is receiving added emphasis are thus partly practical and partly idealistic. Thatte's study evaluated the differential impacts of front-end (youth) and recurrent (adult) education on hierarchic status and earnings of individuals. It was observed that recurrent education does play a compensating role in a less developed country like India, as diminishing total effect of front-end education is compensated by the rising total effect of recurrent education. Thus, adult education is seen to provide "second change" opportunities for achieving upward career mobility.

In the West, people are increasingly found taking a break from work to go back to the universities for renewing and replenishing skills and tools. This has resulted in what is popularly known as the "graying of the universities". This will be inevitable in India too, if people do not want to be outdated in the context of liberalization and globalization and the resultant competition in the product and labour markets. The employer expectation from the employees in the context of modernization will go up. In a highly competitive environment, rising wage rates would be possible only if the productivity also rises from time to time. Everyone will be forced to upgrade competencies. As a result, many will be forced to go back to universities to revise and update their arsenals. In other words, in an emerging era of information technology, universities — regular and open — are destined to play a critical role. The government cannot escape its responsibility if it wants the people and the nation to survive and progress.

Conclusion

There is a dramatic change in the composition of students seeking higher education in India. In the past, it was the exclusive domain of the rich and the middle class. But with almost free education up to +2 stage for all segments of students, there is a natural rush for the +3 stage (graduation) as well. For the socially and economically backward students, the higher education is the only means of upward mobility. If their education needs are not met by the state through effective subsidy, they will continue to remain deprived. Moreover, the reservation of seats in educational institutions, ranging from 50 to 69 per cent for different backward categories, will be meaningless, if the poor have to pay for their education. In other words, the proportion of students seeking higher education from among the poor and backward is rapidly increasing only because of the state patronage. If the state does not treat higher education as merit good, the socially and economically poor will remain poor perceptually. The Directive Principles of the Constitution, particulalry attaining social and economic equity, will remain a pipe dream.

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Higher Education as a Non-Merit Good

V.P. Garg*

Recently, it has been debated that higher education should be treated as a non-merit good; hence funds spent on it should also be treated as "non-merit subsidy". This debate has got sharpened after the release of Discussion Paper by Ministry of Finance, Government of India in May, 1997 on *Government Subsidies in India.*[1] According to this paper "a significant portion of subsidies in higher education is appropriated by the middle to higher income groups, because shortages of seats in this sector are cleared by quality-based screening in the shape of entrance examination, interview, group discussion, etc where the poorer sections of society are easily competed out." (P. 16).

Discussion paper suggests fiscal correction and reforms in our present regime of subsidies which *inter-alia* include:

(i) reducing the overall scale of subsidies; (ii) making subsidies as transparent as possible; (iii) using subsidies for well-defined economic objectives; (iv) focusing subsidies to final goods and services with a view to maximizing their impact on the target population at minimum cost; (v) instituting system for periodic review of subsidies; and (vi) setting clear limits on duration of any new subsidy schemes.

It further states that there is clear scope for increasing user charges in areas such as industries, power, transport, irrigation, agriculture and education. (P. 16).

Analysis in this paper reveals that central government subsidies on education amounted to about Rs. 2400 crore (As per National Institute of Public Finance and Policy (NIPFP), New Delhi : 1994-95 Estimates), constituting 5.6 per cent of the total Central subsidies of Rs. 43,047.8 crore. The states provide the bulk of subsidies on education. About one-fourth of State subsidies are on education. The inter-sector-allocation of state subsidies on education between elementary, secondary and university levels indicates that about 50 per cent of the total educational subsidies go for elementary education. The share progressively falls for secondary and university education. The recovery rate as a whole in this sector is less than one per cent. The recovery rate even in the university sector is as low as 1.25 per cent. (P. 12)

Theoretically speaking, subsidies are advocated when the social benefits of a particular service or commodity are greater than the sum of the private benefits of the consumers. Empirical evidence suggests that social benefits or so-called social rate of return in higher education are lower as compared to secondary and primary education.[2] The argument for institutional subsidization of higher education becomes weak as comapred to a policy of institutional subsidization of secondary or primary education if we go by empirical evidence. Further, data suggests that over the years, the contribution of 'Fees' and 'Endowment' in higher education have gone down. This trend is clearly discernible since 1950-51 onwards. In case of India, according to Tilak, "The elasticity of expenditure on education (measured as percentage increase in education for a unit increase in total expenditure) of the households is much less than the elasticity with respect to government expenditure"[3]. This indicates untapped willingness of households to pay for education.

The expansion of higher education particularly of traditional 'general courses' has gone unabated. Today, we have 65 lakh students on university and college rolls in more than 9000 colleges and 229 universities. Could we afford to add upcoming aspirant graduates on Unemployment Register of Employment Exchanges? Are we addressing to the so-called internal and external efficiency of this system? This does not mean to labour this point that funding of higher education from the government sector (centre and states) should be downgraded. But the need of the hour is to rationalize it for better fiscal management and allocative efficiency.

This author's own research of Panjab University, Chandigarh (*Garg* : 1985, 1996)[4] indicates that there is scope in this university for carrying out cost-effectiveness and further improving its finances through a process of (i) linking university instruction to unit cost criteria and by adopting a policy of differential fee structure by levels and faculty; (ii) adopting economics of scale in some departments which have low-intake of students; (iii) rationalising cost-structure with respect to joint services; (iv) by resorting to 'core' staff concept for sourcing service deparments viz. hostel-catering, civic amenities, welfare programmes and public works; (v) rationalising price structure for university publications including textual material in the Department of Correspondence Courses; (vi) initiating action progressively to go in for self-supporting activities; university estates; recovery of electricity and water charges; contingencies of the munici-

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pal services, Alumni Relation Unit; National Service Schemes; Contingencies and maintenance cost of university hostels; extension and training programmes; Faculty House; Teacher's Holiday Homes; Students Holiday Homes; miscellaneous activities falling under General Administration; and above all conducting of university examination. Only the salary component of core staff and capital assets required to maintain these activities should be met out from the maintenance grants.

Two approaches need serious consideration for working out 'options' to devise fiscal arrangement for managing and raising finances. One of the approaches is to remodify the existing structure and norms on criteria of :

(i) Grants covering objects of expenditure on 100 per cent basis by the government. These are (a) General Administration, (b) Improvement of Education, (c) Miscellaneous Teaching, (d) University Libraries, and (e) Public Relations.

(ii) Activity(s)/Programmes where university has to share 35 per cent responsibility to finance these activities from its own revenue receipts.

(iii) Self-supporting activities/programmes as explained earlier.

Above approaches are based upon micro-analysis of budgetary system of the University of Panjab. But this holds good for any other university because the structure and processes of academic programmes in an affiliating university broadly correspond to this frame.

So in conclusion, it could be stated that a time has come to adopt a selective and discriminatory (affirmative intervention) policy of institutional subsidisation and reallocation of resources to academic programmes of the university in tandem with productivity so as to gain optimal economic and social benefits. This selective approach is meant to ensure (i) access to weaker sections viz. SCs/STs, differently abled, women, rural sector, (ii) selective academic programmes/disciplines/levels of education where social returns are higher and which lead to correct regional imbalances, (iii) withdrawal of subsidies progressively on services as discussed earlier, (iv) where private benefits are quite distinct and prominent; 'non-merit good' and 'non-merit subsidy' should be treated axiomatic and cost-recovery from the ultimate beneficiaries is desirable to make subsidies transparent and targetted.

[The opinions expressed in this paper are exclusively of the author and in no way should be attributed to his organisation or Government.]

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The government cannot abdicate its responsibility towards the poor, by relegating higher education to an insignificant corner in the budget, under the pretext of resource crunch. What it should do is to rework the priorities and hand over all sectors, which are commercially viable, to the private sector, retaining only public and merit goods for government allocation. The government has to spend for the poor and the needy — socially and economically — and not for the middle and upper class segments. The latter can operate in the market, but the former cannot. The poor, who have no command over the means of production, except the raw labour, can improve their bargaining power if it can upgrade the quality of labour. This can be achieved only through higher education. The government will do well if higher education is not upgraded to the status of a "private good". We wish to reiterate that higher education is the only hope for improving the social and economic dignity of the waker sections of the society.

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Is Higher Education a Non-Merit Good?

Shri Prakash*

Rehabilitation of supply side Economics has imparted an urgency to the initiation and early completion of structural reforms and adjustment in the erstwhile socialist and the developing countries to transform them into market economies. But the scarcities of real and financial resources necessitate the elimination of infructuous and reduction of less essential public expenditure. One way to reduce public expenditure is to withdraw subsidies either totally or partially. Another measure suggested is disinvestment in public sector undertaking (PSUs).

Public Goods

The adjective 'public' refers generally to all the people of the country, community or a place. It may also refer to something that is open to and shared by all. These may be goods, facilities or services provided by the government or its agencies for the benefit of the people taken as a whole. All persons may thus have usufructuary rights over public goods without anyone having the right of ownership. Hence, public expenditure pertains to the expenditure incurred by the state/government and its agencies to satisfy public needs or collective wants.

Public needs are collective in nature and these needs generally arise from the demand for the performance of the essential functions and the discharge of the statutory and other obligations and responsibilities by the state. Satisfaction of collective wants depends upon the provision of public goods or services. A good or service is a desirable object and article, or a thing worth attaining or having. But its worth arises from its capacity to satisfy the human need(s) or want(s). Naturally, a public good may be defined as a commodity or service that can satisfy the collective want(s) or demand. Public goods being in the 'Public Domain', supply of such goods or services is meant to be availed of by the people as a whole. It implies that usufructuary rights of public goods are not subject to 'copyright', 'reservation', 'privilege', or restrictions whatsoever. Besides, the ownership remains vested in the public authority.

Public goods have generally been associated conceptually with the supply of potable water, sanitation, conservation, street lighting, law and order, external defence, administration of justice, and some social services and welfare measures. Following important facets of public goods may be noted: (a) these are essential for physical existence, social order, and the physical, mental and moral health of the country, (b) cost of production and/or distribution of the public goods is extremely high, while the returns on massive investment needed for their production are low. Both these facets make private investment to move away from such lines of production, (c) irrespective of public or private ownership and operation of the enterprises in these fields, such production lines naturally converge towards monopoly, (d) a very high degree of externality, positive or negative as the case may be, make the containment of the costs and or benefits to be confined to specific persons/groups difficult for both the producers and users or consumers. Hence, spill-over effects, both direct and indirect, are quite high and their percolation effects are widely spread over time, space and people, (e) numerous elements of costs and the benefits of such goods are qualitative and difficult to measure quantitatively. This makes their valuation, and hence costing and pricing difficult.

As a special case, some specialized service/facility or a specific good may also be supplied for the benefit of special target groups. Public goods/services may be supplied either totally free or at less than cost prices. The difference between the cost and the price of such goods/services may be defined as subsidy in such cases. If the whole or part of the cost incurred on public goods is not returned to the producer through subsidies either the firm would be closed down or it will be forced to raise the price. Higher prices will eject consumers with lower purchasing power from the market, resulting in a lower output, less employment and reduced welfare and growth.

Merit Goods

Within the wide range of public goods, a distinct category, designated as Merit Goods, has come to be distinguished. The word 'merit' refers to an attribute, capability, quality or an intrinsic value and/or worth. The possession of this quality may make a person worth and deserving of getting the benefit to use or the ownership of the given good or service provided by the public authorities. Since such quality entitles and empowers the person (s) to have an access to and get either the usufructuary or ownership right

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of the good or service in preference to such persons as do not possess the entitling and empowering trait or quality, the merit goods are supposed to be distributed according to the principle of 'Meritocracy'. Distribution of merit goods may imply discrimination between persons by the public authority in accordance with the chosen criteria.

But this is not the way the White Paper defines merit goods. The principle of meritocracy selects persons for a) reward with the conferment of the usufructuary or ownership right of the merit goods, or b) inflicting the punishment of deprivation from having the access to the merit goods or services. Thus, the merit goods are the special types of public goods. But the definition of merit goods, contained in the White Paper titled *Government Subsidies in India* is quite different from the above definition. According to this definition, such goods may be called merit goods as give rise to *'substantial externalities'* and *'it should be possible to price them, however imperfectly'*. Now if a good or service confers benefits not only on those who purchase or consume it but on others also, then there is said to be a positive externality. If the production or consumption of such goods inflicts some loss, direct or indirect, visible or invisible not only on the direct producers/consumers but on others as well, a negative externality is supposed to exist. There may also be certain degree of indivisibility characterizing the supply of and demand for merit goods and services irrespective of the number of consumers to be served. But the definition of the merit good in the White Paper, issued by the Government of India, does not consider these aspects of the provision of merit goods. Numerous elements of costs and benefits arising from such externalities may be indirect, invisible and even non-quantifiable, though their effects may be experienced both visibly and invisibly. Such goods and services are difficult to be costed and priced through the market mechanism. Certain components of the costs and benefits may even be non-quantifiable. Consequently, market will not be the proper instrument of resource allocation, and hence, the determination of output and prices of merit goods.

Whatever estimates of costs and prices are derived through the market, these will obviously be imprecise and imperfect. It is thus obvious that the phrase 'it should be possible to price them however imperfectly' used in the White Paper to define merit goods is (a) redundant, on the one hand, since it is never possible to price a merit good precisely, and (b) the externalities associated with certain public and merit goods may be so enormous as may make it difficult to price it. So these two criteria may pull in opposite directions.

Decisions regarding resource allocation, determination of output and the prices to be charged from the direct beneficiaries of merit goods will also be arbitrary, imprecise and imperfect and even adhoc, irrespective of it being supplied by private or public sector.

Another difficulty with this definition propounded by the White Paper is that the 'magnitude' of 'substantial' externality is vague, non-quantifiable and arbitrary. An implication of the definition with which we started the discussion is that it is the very presence of externalities, irrespective of their negative or positive impact and the magnitude of the impact, that renders the costing and pricing of the merit goods by the market ineffectual. Market failure warrants the intervention by the government.

But market failure is not the only reason for state's intervention in the economy. The most compelling reason for the public enterprise is normative that the state has to serve some social purpose which private enterprise will either ignore or violate or serve inadequately (*cf. Anderson et. al.*, 1986). Then, the social preference to public rather than private ownership, control and operation of certain production units may dictate such interventions. The given enterprise may appear to private firms to be too large and risky. Long gestation periods and heavy investment requirements with low or meager returns may make the venture unattractive to private entrepreneurs though it may be highly desirable on grounds of welfare or justice. Several times, state has to take over the sick mills of the private sector including those in education (*Prakash*, 1993). Public enterprise may bestow better care in the designing and operation to mitigate socially undesirable effects and enhance socially beneficial effects of certain production operations than the private firms may ever care to consider. All these may be considered to furnish the justification of the classification and provision of certain goods as public or merit goods by the state.

Merit goods have been defined from another viewpoint also : "The Government rejects the basic premises of consumer sovereignty... and argues that in certain selected areas there is a role for paternalism — the governments can make better choices than individuals. Goods that the Government mandates to be consumed like compulsory education — are called merit goods" (*Stiglitz*, p. 518, 1997). It is obvious that it is entirely for the government to declare any good or service to be the merit good. Government's decision is presumably to be rational, as is implied by the use of the phrase that 'Government can make better choices than individuals'. Such premises have to be based on

(a) Practical experience, reflected by the past patterns of individual choices, the characteristics of the good or service under consideration;

(b) The importance attached to the social objectives that the government wishes to achieve through the provision of such goods or services, and

(c) Handicaps or resource limitations that may prevent the masses from having the benefit of the good or service if it was to be produced or provided by the private enterprises at prices proportional to costs. Unfortunately, the White Paper overlooks all these three aspects.

Non-Merit Goods

As against the conventional wisdom, embodied in the received knowledge, the concept propounded in the White Paper is fuzzy and it blurs the operational line dividing the merit and non-merit goods, according to the implications of the concepts enunciated in the White Paper. If the externality is not substantial and if the good cannot be priced even imperfectly, it may be designated as a non-merit good. This raises four questions : i) how to identify externality and the direction of its impact, ii) how to quantify the magnitude of its effects, iii) how to determine that the externality is substantial or not, and iv) if a good cannot be priced even imperfectly and is treated as a non-merit good, how the resources will be allocated to it, what will determine the quantity of its output to be produced by the private sector, and how will it be costed and priced for the disposal in the market. White Paper is blissfully totally silent on all these points. Maybe the clause relating to pricing contains some typographical error.

These questions demonstrate that the definition propounded by the White Paper is conceptually defective and it is difficult to operationalise. All the same, a large number of commodities have been categorized as merit goods, while numerous other goods have been classified as non-merit goods supposedly on the basis of the application of the above concepts of merit and non-merit goods. The non-merit goods will qualify for the withdrawal of subsidies. However, no empirical or theoretical evidence has been put forward to support the classification and the satisfaction of the conceptual framework of the White Paper. The paper has not spelled out any criteria to identify the presence or absence of externality and it has not propounded any method to quantify the benefits or costs of externality. Besides, no norm has been formulated to determine the substantiality or negligibility of externality. Besides, even if the government determines some goods to have no externality, it does not imply that there is no case for government intervention and/or subsidization. Satisfaction of any criteria that we have mentioned above for government intervention will justify both government intervention and subsidization. The goals of the promotion of development, welfare, equity and justice furnish strong grounds for intervention and/or subsidization or penalization. Then, the application of either our criterion of possession of some special qualification, capability or trait qualifying a person to get the benefit of the services, or the application of the Stiglitz's criterion of government mandating a specific quantity of the good or service to be consumed/used by all or selected groups of persons will make even goods with meagre externality qualify for government intervention and subsidization. The discussion has shown the limitations of the concepts in the White Paper. Application of the concepts to classify goods is still more fuzzy.

Conceptual Fuzziness

Removal of the conceptual fuzziness in the White Paper is essential before we discuss whether higher education is a non-merit good as has been claimed in the White Paper. In order to analyze the classification of elementary education, and hence, all institutions and persons imparting elementary education, in the White Paper as being associated with the provision of the merit good, while all higher education, and hence, institutions and persons associated with its provision as being associated with the provision of non-merit good, one has to keep the conceptual confusion of the White Paper and its operationality in critical view.

In case of elementary education, it may be pointed out that more than 300 schools were closed in Kerala during last couple of years, since enough number of children were not available. Enrolments fell below the accepted norm due to (a) parents wishing to impart quality education to their children preferred high fee charging, English Medium, Private Schools to Government or Municipal Schools. This is happening all over the country, irrespective of rural or urban locations of the schools (*Prakash*, 1998). Naturally, the question arises why should government waste public money in the provision of a so-called merit good the quality of which is highly poor, negating the very purpose of the provision of the service and which the users do not want to avail of.

Then, many individuals and private coaching centres also impart elementary education. If externality criterion is satisfied by government and municipal elementary schools, then the above persons and institutions also satisfy the same. Hence, they also qualify for government subsidy. Then, there are high fee charging, English medium public schools which are fleecing the parents, exploiting the teachers, and enjoying the subsidies, granted by the government in the form of grant of land almost free or, at best, at half of the market price. Economic rationale in both the cases manifests poor grasp of the economics of education and lack of appreciation of the objectives and functions of education, on the one hand, and the neglect of precious national resources being wasted in the name of provision of elementary education of almost zero quality in public sector schools on the other. In any case, people do not demand elementary education of indifferent quality that is provided by municipal/govt. schools. It shall be better, if we extend the rationality to its logical conclusion, if all the primary and middle schools in the public sector, having below optimum enrolments and providing low or no quality education and the corresponding directorates supervising them are closed down. Parents complain that many times schools do not open even on working days, teachers abstain, and even when they are present, hardly teach. Besides, pupils pick-up bad habits from the class-mates. Most municipal and village schools of the government are patronised only by the poorest among the poor. Money saved by the closure of such schools in this manner will be more than sufficient to take care of the elementary education of children of such schools if their fees are paid by the government to the high fee charging private schools. Incidentally, what is externality of elementary education and its magnitude have not been estimated by the author of the White Paper. How have they determined its substantiality?

Higher Education

Now we turn to higher education. If it is a non-merit good, there is no case for having a Ministry of Human Resource Development, University Grants Commission, ICSSR, ICAR etc, and the bureaucracy (in its entirety) who are there to discharge so called functions of educational planning, educational supervision and management should be disbanded and all the research laboratories in the government sector should also be disbanded. Alternatively, all the above agencies and functionaries may be asked to generate their own resources and operate according to the laws of the market. May be most of them will ply taxis as happens to be the case with the University Dons in some Western economies, where privatization has been pushed quite far. Consequently, such programmes as learning of philosophy, language, literature, linguistics etc fail to find sponsors and/or market demand. This is just to demonstrate the absurdity of the consequence as that will flow if the logic of White Paper is stretched to its natural limits if we accept it.

Now let us examine the question whether higher education has no or low externality. There is no logic which may show that externality is confined only to any one level or type of education. Elementary education performs four basic functions :

(i) it imparts literacy and many indirect benefits of literacy manifest the externality of elementary education,

(ii) it prepares students to pursue secondary, higher education. Externality of elementary education thus arise partly from its linkages with higher education,

(iii) it supplies school graduates to be trained into lower order skilled manpower,

(iv) it draws its teaching manpower from higher education.

Last two functions also reflect the externality of elementary education that arises from its linkages with the economy.

Without higher education, elementary education will crumble. But what are the functions of higher education? Higher education prepares students (a) to meet manpower needs of school education, including elementary education. Both teaching and non-teaching manpower has to be supplied by higher education, (b) a substantial proportion of output of graduates of higher education is absorbed within higher education itself. This part is endogenous, though its indirect effects have certain degree of externality, (c) higher education supplies qualified manpower to meet the middle and high level manpower needs of the economy and this also manifests externality of higher education. Remuneration commanded by persons having higher education qualification is much higher than that commanded by graduates with elementary education. Hence, degree of externality of higher education on this count is much larger than that of elementary education, (d) higher education supplies manpower needed for R&D. If the technical and scientific manpower were not available, India would have not joined the exlusive clubs of (i) nuclear nations, and (ii) space powers. Besides, it would have not been possible for India either to industrialize or achieve green revolution without research having been done by agricultural scientists. Its propagation, dissemination and facilitation of application in the fields would have remained a mirage, if the middle and lower order functionaries were not available from agricultural colleges and universities. The new ideas, innovations and inventions that originate from the higher education sector, will not be worth if they have had no or low externalities. Would the economist(s) associated with the enunciation of the concepts of White Paper care to quantify these external benefits of higher education.

On the basis of above analysis, it may be concluded that the concepts and criteria of classifying goods into merit and non-merit categories, adopted in the White Paper, is perverted. If these criteria had been applied in the past, India would have probably not boasted of Sir (Dr.) Hari Singh Gaur, Dr. B.R. Ambedkar, Homi Bhabha, Sethna, Satish Dhawan, Raja Ramanna, Abdul Kalam and P.C. Mahalanobis to cite only some examples. If, however, we adopt the first concept of a merit good that emphasizes the possession of some special quality/capability, entitling and empowering a person to have an access to the supply of the specified good, then a case may be built up for the evaluation of new approach to higher education in order to judge whether subsidization of higher education, taken as a whole is justified, and whether its supply to all the direct beneficiaries has to be subsidized equally.

If all recipients and all institutions imparting higher education are state owned/controlled and are fully or largely subsidized, as has been the case in the past to a great extent, then it is likely to have three possible outcomes: (a) it will result in the monopoly of the state, (b) it eliminates competition since universities can be established only by an Act of Parliament/Legislative Assembly. It restricts the choice for the students and parents, and (c) elimination of competition between private and public institutions for better quality and higher standards will result. On the benefit side, it may be stated that the existence of an institution in the neighbourhood under public ownership/control provides an access to the service to such students also who would have not been able to afford either the hostel cost of an outside institution or high cost of private institution. It also makes cohesion, mutual adjustment, shared identity and inculcation of possible values. Will some one among the authors of White Paper quantify the degree of externality and its costs and benefits? If, however, neighbourhood consists of only homogeneous groups, the group traits shall be perpetuated. In case of low incomes of the neighbourhood or command area, quality differentiation between institutions of the level and type will emerge. Economic inequalities may then tend to be transformed into inequalities of quality education. But the ends of equity and social justice will still be served. This, in turn, will transform current into next generational inequalities of incomes and education (*Prakash*, 1997). Will someone attempt to quantify the effects of such externalities? In view of this, one may think of permitting private institutions of higher learning to operate throughout the country to inject certain degree of competition. Though the experience with high capitation fee institutions of technical and professional education in India has not been very encouraging, yet with the evolution of correct parameters and criteria for operations and performance evaluation, the principle of meritocracy-cum-capacity to pay may be given a trial. But it should not be confused to support the view that higher education is a non-merit good, and hence, its subsidization is unwarranted or it should be privatised.

The criteria for judging the merit goods are: (i) equity and social justice, (ii) efficiency, (iii) growth, and (iv) optimal utilization of available resources. Question of subsidization or taxation cannot and should not be discussed either in isolation or arbitrarily.

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Leading Issues in Economics of Higher Education

Mohammed Muzammil*

Enquiring into the economic issues involved in the provision of the service of higher education becomes imperative in view of the government's move in India to treat higher education as a non merit good and thus to prepare a case in theory for contracting expenditure on this sub-sector in public policy.

This paper begins with a discussion of the theory of goods and endeavours to place higher education in the taxonomy thereof. It examines the logic of market and the treatment of merit goods in the light of recent researches conducted world over. The case of higher education as investment is discussed in detail taking into account the considerations that must be kept in mind while determining expenditure on higher education in India viz. enrolments, national dependence of students and the composition of expenditure. The dispensing of higher education in India is still in infancy and the launching of the Structural Adjustment Programme (SAP) and the failure of the government on the front of efficient provision of education so early in the day have also been taken up in turn. The issue of the connections between higher education and economic equality and social change is deliberated upon towards the end of this presentation which is followed by concluding remarks.

Higher Education in Theory of Goods

In economic discussions goods are referred to things people prefer more of rather than less : thus income, leisure, education and security are *goods* while pollution or risk are *bads*. From the viewpoint of financing, supply and pricing, there are three types of goods, viz. social goods (or public goods), private goods and merit goods.

Social or public goods are those which, if they are provided at all, are open to use by all members of the society. They are indivisible and thus cannot be priced. They are to be consumed in totality, for example the services of defence, law and order, public parks, bridges etc. Nobody can be excluded from using them. Owing to indivisibility, these goods cannot be priced and therefore they cannot be provided for private profit through market mechanism.[1] Thus, social goods are provided free of charge by government and their production is financed publicly through government revenue often raised through taxes.

On the other hand, private goods are those which are available for a price only and thus those consumers who do not or cannot pay the price are exluded from the consumption of those goods. Private good are provided through market mechanism for profit like food, clothes, furniture etc. In a society based on socialistic principles, government assumes even this task in peoples' interest (not for earning profits!).

The category of merit goods lies in between these two (public and private goods).[2] These are those goods whose consumption is believed to confer benefits on society as a whole greater than those reflected in consumer's own preferences for them. This implies that they have beneficial external effects, presumable by making the consumers better or more productive people. Merit goods, therefore, are sometimes subsidised by government and sometimes provided by voluntary organisations and charities. In some cases plausible mechanisms for beneficial externalities can be suggested : well educated people are more likely to be employed and well housed people may be less likely to become criminals. In other cases, however, it is hard to think any plausible mechanism by which such externalities could arise : how for example, does watching grand opera make people better citizens? (*Black* : 1997, p. 298)

Thus, after having understood the placement of higher education (which generates more spillover benefits and positive externalities to the society), in the taxonomy of goods, one can easily foresee the intention behind the move to declare higher education a non merit good. It is further to be noted that spillover benefits or social returns to higher education are much higher in developing countries like India than in developed countries like UK and USA (*Muzammil*: 1984). Thus, by all reasons higher education must remain a merit good in its treatment by government for allocation of public funds in its supply.

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The Logic of the Market and Merit Goods

With shrinking confidence in government's efficiency and increasing reliance on the golden rule of market mechanism, a large body of research evidence has come up in developing as well as in developed countries which go to substantiate the logic of greater use of fees and other user charges for providing merit goods (particularly higher education) by the government to the people of the country.[3] This argument coincides with the liberalisation of economic policies being pursued almost world over since the breakup of USSR. In other words, while previously more was considered better for the government, now less is deemed preferable leading to suggest that government should reduce its functions and thus expenditure.

It has been revealed that almost three-quarters of public spending in the developed countries of the world today is allocated to programmes (services) *that are marketable but not marketed*..[4] In fact, there are two types of debates going on with regard to charging fees for providing merit goods. While in developed countries, the deliberations concern the efficiency of provision; in developing countries the issue is not as much concerned with efficiency as it is concerned with the debate that the people who by law should receive merit goods will receive them in absence of revenues from fees collected for the services. In other words, the question is that whether higher education should still be provided almost free or at very low charge or it should be provided with a charge of adequate amount of fees. The latter part of the argument leads to privatisation of higher education in which case it is entirely subjected to market mechanism (*Roth* : 1987).

Both in recent history and even at present, government is the principal provider of education in most countries of the world. In order to promote the spread of higher education and to acknowledge its characteristics as merit good, governments offer education at a very low and subsidised cost to consumers. In many countries, it is argued that this policy has led to increase in demand for education which far exceeds the supply (*Gertler and Glewwe* : 1989). Though this conclusion (that demand for education has resulted due to low fees) is not very plausible, it has led many scholars to argue that government should charge user fees to raise additional resources to supplement public revenue in order that the government is able to expand and improve educational provision. Since higher education is shown to yield very large quantifiable pecuniary benefits, it is argued that it should be subjected to market mechanism and thus government should wash its hands off from the financing of higher education.[5]

Since merit goods are also like public goods, their provision cannot be explained in the framework of that of social goods. It necessarily involves interference with consumer's choice which is substituted by (government's) imposed choice.

Higher Education as Investment[6]

Higher education is both : a consumption good and an investment input. It is a good of immediate consumption as well as a consumer durable; and it is investment in the sense that it creates employability and leads to better earnings for its recipient. The returns to higher education are not only of private nature, but what is more significant is that there are social and national returns to higher education and its benefits are widespread and far reaching. Alfred Marshall regarded higher education as national investment and keeping this value in mind. Musgrave regarded it as a merit good of great social significance. Myrdal says that development in developing countries is basically an educational process and educational expenditure is of 'instrumental value'.

Owing to the inseparability of consumption and investment aspects of educational expenditure, returns on any incremental expenditure to either the individual or the society are not computable. Robbins Committee on Higher Education in UK (1961-63) had noted that spillover effects of higher education were so far reaching that it was difficult to identify them leave alone their measurement. It is, therefore, total educational expenditure which will have to be taken as investment and not any part of it.

The same argument has also been advanced by the National Commission on Teachers—1983-85 of the Government of India which has observed that *since the various levels of education are interdependent, it is not possible to say that one level is more important than the other. It is the view of the Commission that inadequacy of funds provided for education as a whole quite often leads to the claim that higher education with a greater per capita expenditure is depriving elementary education of what is its due.* (GOI : 1986, para 2.08, *emphasis added*).

The Commission has very rightly noted that, of course, realising the importance of higher education in world competitive industrial and technological development, sometimes *international agencies tend to reinforce doubts about higher education and counterpose, priority-wise, against elementary education.*[7] The

Commission has cautioned in this respect and reaffirmed that there ought to be a proportionate and harmonious development of the various levels of education so as to optimise education's role in esnuring social change. There can be no, a priori, formula for sharing of resources between these levels but what proportions have come to be established in the developed countries could be a general guide to us. A study of this kind could show that we have to go a long way in providing adequate funds for higher education.[8] (GOI : 1986, para 2.08, *emphasis added*).

Turning to wider considerations, it may be pointed out that higher education ensures not only economic growth by increasing productivity and efficiency through inventions and innovations, it also lies at the root of national development which goes far beyond economic growth. It concerns with creating a cohesive and vibrant nation out of people speaking different languages, professing different religions and possessing a wide variety of cultures.

These goals of economic, social and cultural development at once require provision of education. Without education they cannot be achieved; with inadequate education the period of economic disabilities, regional imbalances and social injustice will be prolonged leading to possible build up of disintegrative tensions. Through proper education, the achievement of economic and social development can be facilitated and expedited. The (well educated) human resource would have a multiplier effect on the utilisation of other resources. That is why the concept of education as an investment in developing countries has been increasingly accepted and that is why the Report of the Education Commission (1964-66) spoke of education as the only instrument of peaceful social change.[9]

Expenditure on Higher Education

The argument to rescue government subsidy on higher education in India has been advanced on the basis that higher education is receiving proportionately larger amount of public money. But a look at the comparative figures in similarly placed developing countries would reveal that the money spent on higher education in India is still much less than what its counterparts are spending in other regions of the world.

According to the *Human Development Report* 1997 (*UNDP* : 1997), higher education expenditure in India as a ratio of all levels is only 14 per cent which is much too less than what other countries are spending on this level of education. For example, it is 17 per cent each in Thailand and Malaysia, 18 per cent each in the neighbouring Pakistan and Indonesia, 22 per cent in Iran and 26 per cent in Brazil (the largest populated country in Latin America). Even in a country like China, higher education claims 17 per cent though educational expenditure as a ratio of Chinese GNP is still 2.6 per cent! In India, total educational expenditure accounts for 3.8 per cent of the GNP whereas in the industrial countries an average of 5.4 per cent of the GNP is spent on education and the world average comes to 5.1 per cent.

Among developing countries which spend significantly on education (as a ratio of their GNP) are : Venezuela (5.1 per cent), Malaysia (5.3 per cent), Iran (5.9 per cent), Tunisia (6.3 per cent), Cuba (6.6 per cent) and Zimbabwe (8.3 per cent).

Thus, from both the considerations, India lags far behind. It urgently needs to step up both the total allocation for education and the share of higher education.

Enrolment

It's really shameful that even after 50 years of Independence, India remains an educationally backward country both in terms of literacy and spread of higher education. It is important to note that Government of India wants to reduce expenditure on higher education even as enrolment in higher education in India is still under 10 per cent of the age cohort. The demand for expansion of higher education is legitimate and pressing indeed.

Leaving enrolment in humanities and liberal arts aside, natural and applied science enrolment in higher education in India as percentage of total tertiary enrolment is still 26 per cent, whereas it is 34 per cent in Sri Lanka, 37 per cent in Iran, 39 per cent in Bahrain, 40 per cent in the Republic of Korea, 47 per cent in China and 50 per cent in Algeria. It is much too evident that higher education in natural and applied science is much more productive than that of languages and literature, still the expenditure on this level is allegedly said to be too large. In fact, there is a legitimate requirement of raising this enrolment ratio which would justifiably need more funds for its advancement with all modern specialities.

Often a false propaganda is made that India has overcrowding of scientists and technicians but a close look at relevant comparative figures would reveal that the number of R and D scientists and technicians per thousand of population is only 0.1 in India whereas the average for all developing countries is

0.3 and the world average (1.0) is ten times better than the Indian standard. For the developed countries the relevant figure is 3.3 per 1000 of population (*UNDP* : 1997). It calls for larger allocation of funds to specialised higher education in India.

Tertiary Students Abroad

This is an equally important feature that most of the developing countries are sending a sizeable proportion of their tertiary students for studying abroad and still spending a higher proportion on their domestic higher education.

This is equally true in case of high income countries and also low income countries. For example the number of tertiary students studying abroad as a ratio of the total tertiary students in the home country accounts for 6 per cent in China, 11 per cent in Iran, 14 per cent in Morocco, 28 per cent in Malaysia, 30 per cent in Kenya and 50 per cent in Hongkong. On the other hand in India, tertiary students studying abroad account for only 1 per cent of those studying at home (*WB* : 1997). Thus, in view of almost entire body of tertiary students studying at home, larger responsibility rests on the shoulders of the governments in India to support higher education.

Composition of Expenditure

Total higher educational expenditure broadly consists of the following : (i) Salaries of teachers which account for 80-82 per cent of the total, (ii) Management of salaries, i.e. non-teaching (administrative) expenditure which claims 10-12 per cent share, and (iii) Developmental expenditure is the remainder i.e. 6-10 per cent of the total only. Even this meagre amount, more often than not, is diverted to finance the Dearness Allowance and festival advance etc to employees (*Muzammil* : 1989).

Now, it is important to be noted that almost 95 per cent of the higher education expenditure in India is employment expenditure and only 5 per cent remains for what is termed as development. Salary payment ensures survival, improvement and expansion would require more money.

In developed countries, however, a sizeable proportion of higher education expenditure is meant for qualitative improvement which comprises heads of expenditure other than 'salaries'. For example, in England, during 1992-93, total expenditure on higher education amounted to £ 6978 million of which only 60 per cent went on salaries and other employment costs; and the remainder 40 per cent was the non-staff expenditure on higher education. (*HEFC* : 1994).

Thus going by the British norms (as obtained in 1992-93), India will require a substantive hike in higher educational expenditure to match the composition that has already been reached in many other countries as well.

Spread of Higher Education

In India, there are reported to be 229 universities and equivalent institutions of higher education for a population of 960 million, while, for instance, in the UK, there are 189 universities and equivalent institutions[10] for a population of 59 million! (*HEFC* : 1994). Thus, regarding the spread of higher education, India is still in the age of infancy and in early stages of development, enrolment in primary education far exceeds that of secondary and the enrolment in secondary education far exceeds that of higher. But as the economy advances and population stabilises enrolment ratios at higher levels go on rising and eventually universalisation of higher education is reached and thus, certainly higher education becomes the largest resource consuming sector of education. In Canada, for example, universalisation of enrolment in higher education has been reached where higher education enrolment ratio is as high as 103 per cent of the age cohort population ! (*WB* : 1997).

It is strange that even at less than 10 per cent enrolment ratio at the higher education level in India, an argument is being prepared to reduce expenditure on this level whereas if this ratio goes up (which is very naturally expected), there will be more demand for increasing expenditure. In many countries of the world (both developed and developing), enrolment ratio in higher education has already reached a level much higher than that in India; for instance Indonesia (10 per cent), Brazil (12 per cent), Mexico (14 per cent), Thailand (19 per cent), UK (37 per cent), Argentina (41 per cent), France (50 per cent) and USA (81 per cent) and Canada, as already noted, is on top with 103 per cent enrolment ratio.

Thus, there is all likelihood that the enrolment ratio in higher education in India too will rise at a rapid rate and that will put legitimate pressure on the shoulders of the government to spend more on this sector.

Government's Failure and Structural Adjustment Programme

"During the second half of the twentieth century, governments have been losing credibility world wide, their capabilities have seemed to shrink, they have been generating fewer answers to societies' problems—and posing more of the problems themselves." This is the opening sentence of chapter I : "Curbing the Decline of Indian Government" (*Lewis* : 1997).

One may not agree with the period of declining credibility of government which to many may appear to be the last quarter of the twentieth century (in case of India) but there is absolutely nothing to disagree in the rest of the above observation. There was a time when government was supposed to be the champion of economic development and social change and welfare; and to think of any crucial investment in the society was to be reminded of the initiative of the government.

The decade of 1980s proved to be a watershed in the financial management by the Government of India when it started living beyond its means and gradually accumulated deficit in the revenue account of the budget and in the balance of payments of the country. These deficits reached unmanageable proportions and the country had to resort to massive borrowing and embark upon what is called the Structural Adjustment Programme. Very soon it came to be believed that provision through market mechanism is more efficient and desirable than the State provision. But imposing blind confidence is similar to the contest between two singers in which after the first performs, the prize is given immediately to the other because there were flaws in the first one's performance!

The Structural Adjustment Programme is sponsored by the IMF and the World Bank combine as a recipe for the debtor countries. They have been advised to contract expenditure so as to reduce fiscal deficit and the axe is to fall, *inter alia*, on education particularly higher education which is to be declared as a non merit good.

In fact the mess created in financing of education is not singular to India. Education around the globe is a very inefficient excercise. There is strong evidence to indicate that too much is being paid for the performance obtained from educational institutions (*Hanushek* : 1995). The situation can be set right by introducing substantially stronger performance incentives rather than by reducing government expenditure on education because it has been substantiated beyond doubt that expenditure on education affects its quality (*Kremer* : 1995) and Indian conditions are not yet ripe for reducing public expenditure on higher education. Instead the government needs to continue subsidy on merit goods including *total* education and not only the lower rung of it.

Foreign borrowings have constrained the government of the country to function freely. Indebtedness has resulted in slower growth of per capita real GDP and a contraction in investment ratio (as per cent of GDP). A study has revealed that among major debtor countries in the developing world per capita real GDP growth rate has been very low (less than 2 per cent per year), whereas in non-debtor developing countries, it has been much faster (3 to 6 per cent). Similarly investment ratio for major debtor countries has been around 17 per cent whereas for the other category it has been around 28 per cent (*Buffie* : 1992). Thus increasing indebtedness and fiscal belt tightening are leading to contraction in overall public investment. It is bound to have adverse effect on education which has been the last priority even in normal times in India.

In a low income country like India where poverty is still pervasive, higher education needs to be provided even to the weaker sections of the society. By keeping services like education outside the realm of the market, the society upholds the special value of adhering to high and noble ideals instead of being caught in petty financial matters.[11] Temporary financial gains for the government obtained through cutting expenditure on education may result in complete ruin of the national fabric of which India has been known for ages.

It may further be added that subjecting higher education to market mechanism and treating it as a private (non merit) good will reduce educational attainment among the poor and thus will further aggravate the economic and social inequalities. It is rightly believed that provision of free educational services leads to greater social cohesion. For instance, it is said that "social services are not merely *utilitarian instruments of welfare* but also *agents of altruistic opportunities*. Social policy provides and extends opportunities for altruism in opposition to the possessive egoism of the market place."[12]

By the supporters of market mechanism and by the proponents of the idea that higher education be treated as non merit good, a scheme is often suggested that public subsidy of higher education be reduced and higher education should be adequately priced but at the same time fee concession and other support measures be adopted to help the poorer sections of population avail the benefits of higher education. But this scheme of logic would always lead to subjecting the poorer persons to a means test to be able to avail of the concessions and thus realise the benefits of the services. By this means test their self esteem is lowered and a sense of powerlessness is reinforced. Thus, if the service of education is not free (or subsidised) egoism will replace altruism. If the service is free or subsidised to make it available to some individuals only, they will become damaged psychologically because of the social constriction that they are inferior will be strengthened.

Thus.in the present social and economic conditions prevailing in India, it would not be advisable to treat education as a non-merit good and subject it to market mechanism for its provision.

Higher Education and Economic Equality

It has well been proved that higher education is the greatest instrument of social change and equality (*Muzammil* : 1982) but at the same time it is also argued that state financed education is creating inequality and larger benefits of specialised higher education financed through tax money are going to the students of the well to do families and their political powers on educational and budgetary authorities to expand the number of seats in specialised institutions have gone to their further benefits. However, the demand for higher education continues to far out run the supply which has eroded and repressed quality. In view of the costs of education having been socialised, the income distribution effects of higher education has been regressive and the system on balance has tended to entrench even aggravate inequality. (*Lewis* : 1997).

"Yet none of this suggests to me" observes John Lewis, "that the resources India is allocating to advanced training and education should be curtailed (presumably for transfer to the primary level). On the contrary,... economy's growth and efficiency prospects may depend on a much fuller flowering of higher education.... Across the board, there is a call for more investment in higher education that is joined hand-in-glove with a raising of norms and goals" (*Lewis* : 1997, p. 343).

In view of the overall economic policy framework of the country, there may be an effort to internalise the financing of higher education and to tilt it gradually to the private mechanism. While the increasing role of private finance in higher education may be upheld on many arguments, it should not be done at the cost of reducing *public* expenditure on higher education (*Muzammil* : 1996).

Conclusion

Thus we find that higher education in India is a great social investment and is of immense economic value. It needs to be protected as a merit good. In fact, in view of the present stage of development in the country, there is a strong case for increasing the public outlay for higher education instead of contemplating any cut back in its amount. Any reversal of the Constitutionally committed State policy of education in India will not only harm the interest of education but it will retard the development process of the country.

Notes

1. However, public goods can be and frequently are provided privately by individuals and voluntary organisations for motives of altruism and ostentation. Really expensive public goods such as defence are necessarily provided by governments which alone have the power to raise the taxes to pay for them.

2. It may also be noted that there are public goods with "privateness" and there are private goods with "publicness". For detailed discussion vide : Musgrave (1959), and (1969) and Musgrave and Musgrave (1976).

3. The details of argument and a review of World Bank sponsored studies on this issue have been provided by me elsewhere (*Muzammil* : 1996)

4. For details, *see* (*Rose* . 1989, p. 274) Emphasis in original.

5. Vide, for instance, the following : (*Birdsall* : 1983), (*Thobani* 1983), (*Psacharopoulous, Tan* and *Jimmenz* : 1986), (*Jimmenz* 1987) and (*Rose* : 1989)

6. *See* for details : (*Godwin* 1995) and (*Klees* . 1984)

   This section heavily draws on my earlier works : (*Muzammil* : 1989, chapter on Education as Investment) and (*Muzammil* : 1984).

7. As it is indicated later in this paper, the policies followed under the Structural Adjustment Programme tend to curtail expenditure on higher education in favour of primary education.

8. The British experience has been cited in this paper which provides a strong case for allocating more funds to higher education in India.

9 These are the observations of the National Commission on Teachers-II (Higher Education) 1983-85 *Emphasis added by me* (GOI . 1986, paras 2.05 and 2.06)

10 Of the 189 British universities, 148 are in England, 21 in Scotland, 16 in Wales and 4 in Northern Ireland.

11. *See* for details : (*Klees* : 1984) and (*Godwin* 1995)

12. This argument in full details is given in (*Davies* : 1980).

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Higher Education as a Demerit Good

A Misconceived Move

Guljit K. Arora*

I

Introducing the problem

> *"If you plan for a year, plant a seed. If for ten years, plant a tree. If for a hundred years, teach the people. When you sow a seed once, you will reap a single harvest. When you teach the people, you will reap a hundred harvests."*
>
> KUAN-TZU, 551-479 B.C.
> [Quoted in World Development Report 1991, p. 52]

It is well acknowledged now that human resources constitute the ultimate basis for the social and economic development of nations. Human beings are the active factor of production. They undertake capital accumulation, exploit natural resources, build social, economic and political infrastructure and carry forward the national development plans and priorities. Land, labour and physical capital may be subject to diminishing returns but knowledge embedded in human beings is not. Since, the existing stock of the skills, the knowledge, and their training and development pace assume the importance of the most powerful engine of economic growth and quality of nations' development,[1] investment in people provides the firmest foundation for lasting development.[2]

In the development of human skills and to gain knowledge and training, the role of education as a principal mechanism turns out to be the most prominent one. Education constitutes the most vital and integral part of every civilization. Indeed, no education means no-civilization.[3] Education not only imparts the knowledge and the skills that enable individuals to raise economic productivity but also furnish values, ideas, attitudes and aspirations which act as economic change agents.

More recently the experience of many Asian countries having higher level of literacy and basic education shows that education is a necessary precondition for the introduction of economic reforms.[4] At the grassroot level, primary education is undoubtedly more productive. It prepares people to understand and become more responsive to new and rapidly changing technologies and to profit from new circumstances. Transaction costs fall considerably and deregulation and removal of trade barriers become easy. Secondary school education is necessary to create manpower which can perform technical and administrative functions both in public and private sectors. University and/or higher education with advanaced training are needed to provide teachers, researchers, administrators, the professionals (scientists, engineers, agronomists, doctors) and the managerial expertise necessary for making an effective use of material capital and non-material resources.

Education, thus, confers undoubted benefits to societies and individuals. But it can also confer costs by exacerbating certain development difficulties. In almost all developing countries, the government is the main provider of education, but in recent years funds for education have been constrained for various financial burdens. It is argued that educational services particularly the higher education should generate more returns than the existing levels and it should be put under self-financing mode.

Recently, Government of India has brought out a discussion paper on subsidies extended to the different services including education. In addition, many observations on higher education have been made in that paper. In this background, the purpose of writing this paper is twofold : (a) to bring out those observations on higher education, and (b) to critically examine those observations in the wider social perspective of the country. The entire discussion is organized in six sections. After having introduced the problem in section I, the observations relating to higher education made in the discussion paper are discussed in section II. The actual cost of higher education as borne by both the centre and state governments along with the constitutional provisions are discussed in section III. Section IV reviews the successes and failures of the education system in India. The basic contribution of higher education and its social virtues are discussed in section V. The main points emerging from all these sections are integrated together in the form of conclusions in section VI.

II

Higher education as noticed in the discussion paper

Government of India has published a discussion paper entitled : *Government Subsidies in India* in May

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1997. The purpose was, "to generate an informed debate and initiate a more open approach to subsidies."[5] This paper while quantifying the subsidies and their distribution at the aggregate and individual service levels, makes bewildering observations on higher education. Some of those are worth noting :

First, higher education or "education beyond primary level" is categorized as "non-merit" goods. This implies that this service (a) does not give rise to "substantial externalities" and, (b) can be subjected to normal market pricing mechanism.

Secondly, higher education is like many other tangible items, such as, electricity, diesel and fertilizer as "there are normally no significant differences between private and social valuation in these areas".

Thirdly, higher education does not pass the equity test as "most subsidies to higher education accrue predominantly to the better off sections of society as they have an overwhelming advantage in competing out perspective candidates from the poorer sections in getting admissions to courses that are characterized by scarcity of seats".

Since, all these statements have important implications for the young minds and the future generations of India, they deserve a critical review. Before having a review, it may be worthwhile to have an assessment of the constitutional provisions and the stakes of the centre and state governments.

III

Constitutional provisions and cost of education to the centre and state governments

Education as a legislative subject falls both in Union list as well as in Concurrent list. A cursory review of the different constitutional provisions indicates that the centre is expected to take the leading role in providing funds and overall policy directions particularly in higher education. Secondly, the states can also contribute to education, because it is given in the Concurrent List (Item no. 25), which includes "technical education, medical institutions and *universities* subject to entries 63 to 66 of list I" in education.

In List I, Entry 63 refers to, "Institution for scientific or technical education financed by the Government of India wholly or in part and declared by Parliament by law to be an institution of national importance". Entry 64 refers to "Union agencies and institutions for professional, vocational or technical training including the training of police officers, the promotion of special studies or research or scientific or technical assistance in the investigation...". Entry 65 relates to coordination and determination of standards in institutions for *higher education* or research and scientific and technical institutions. Entry 66 relates to ancient and historical monuments and records etc.[6]

Constitutional provisions, thus, suggest that central government has got a much greater role and responsibility in providing higher education, whereas the role of state governments is not as clearly defined. In this background, it would be interesting to find out the centre and states' share in supporting higher education. These shares are derived from Government Discussion Paper and are profiled in Table 1.

Table 1. Cost of and subsidies to education, sports & art & culture

(Rs. Crore)

	Services provided	*Centre 1994-95*	*States 1993-94*
1	Cost of all services	74324.4	77453.7
2.	Cost of education, sports, art & culture	785.2	10443.3
3.	Total subsidies, all services	38446.2	69335.0
4	Subsidies to education, sports, art & culture	782.2	10261.6
5	Cost of education as % of Total	1.1	13.5
6.	Subsidy to education as % of Total	2.0	14.8
7	Recovery rate of Total (%)	48.27	10.48
8	Recovery rate of education (%)	0.38	1.74

Source GOI *Government Subsidies in India*, May 1997, Pp. 17-19

Before, we comment on the implications emerging out of the figures compiled in Table 1, it must be noted that these figures though important are not strictly comparable because they do not relate to the same year. Secondly, the actual cost and subsidies both at the centre and state levels are likely to be actually lower for higher education because it includes the cost of sports and art and culture, also.

Table 1 shows that the cost of higher education to both the centre and state governments put together turns out to be 14.6%. Many would argue that it is on the higher side. One important reason for that is the increased importance given to higher education particularly up to the 4th Five Year Plan. Secondly, state governments share a larger burden of costs (13.5% of total costs) as against the centre (1.1% of total cost). Thirdly, subsidies to education, sports, and art and culture at the state level are much higher. They constitute about 2 per cent of the total central subsidies and 14.8% of the state subsidies. Fourthly, the recovery rates are very very low though they vary quite considerably at the centre and state level. For instance, it is 0.38% at the central level and 1.74% at the state level.

It is quite intriguing to find out that states bear a large burden as compared to centre. The reason seems to be that the finances initially come from both the UGC and state governments, and after a few years the financial control is given in the hands of the states.

How much should be the expenditure on education and what should be its sectoral allocation depends among other things on the needs of the people and the development priorities of the government, which are better reflected in the successes and failures of the country on the education front. It is dealt with in the following section.

IV

Existing education scene — successes and failures

India's educational network is the second largest in the world. It has helped the country to become the second largest reservoir of scientific and technical manpower in the world. Higher education system comprises about 240 universities and deemed universities, more than 8600 colleges and around 3 lakh teachers. Student enrolment is in excess of 60 lakh, a little over one-third of the total are women.[6a] The system has also contributed in bringing about considerable social transformation. It is no more an elitists' system now.

In spite of these achievements, it must also be admitted that India appears to be the only one country entering the 21st century with world's largest illiterate population of 424 million. The rural-urban inequalities are glaring. Differences with respect to sex, caste and gender are still sizeable. Enrolment ratio in higher education is meagre, 6% of the eligible age group population as against 20% considered to be a threshold level for an economy to become an economically advanced country.[7]

Higher education has also been affected adversely by the general neglect of the education sector in government priorities particularly in the recent years. Education in general has suffered all along from severe degree of underinvestment. The share of education in national income has increased from one per cent at the time of independence to about 3.7% in the recent years. This investment is far less than the requirement of the system which is estimated to be 8% of national income (6 per cent being the minimum limit). Among the one hundred and sixteen countries, India ranks as low as eighty-second in terms of the proportion of public expenditure on education to GNP.[8]

The most striking feature in the case of higher education is the declining expenditure. Plan expenditure on higher education as percentage of total expenditure incurred on education has steadily come down from 25% in 4th Plan (1969-74) to 8% in 8th Plan (1992-97).[8a] Given the existing circumstances in which higher education is perceived by many as the terminal point or an instrument of deferring the unemployment pressure, it would be a sheer shortsightedness to cut resources to higher education.

The general situation in higher education is unsatisfactory and even alarming in some ways. The problem of quality — seen in terms of falling average standards is the most important one. The undergraduate teaching is one of the weakest links in the chain of higher education.[9] Teachers while teaching lack intellectual passion. They are neither enthusiastic for learning or discovering new ideas nor feel encouraged to undertake quality research work. Students also lack seriousness and do not show much interest in studies. Cheap books are "crowding out" good textbooks. "Gresham's law' appears to be operating in textbook market. Examination system continues to be traditional. These problems are compelling us to review the fundamental questions. These relate to : what is to be taught and at what pace? whom to be taught? who will bear the cost? What should be the role of UGC? Should we allow other all India level agencies, such as, AICTE, Rehabilitation Centre of India, National Council of Teachers Education etc? These questions have to be sorted out so that the supply of educational service does not become a source of "external diseconomy" and "instability".

V

Higher Education has not yet become luxury

A recapitulate from the above pages shows that education is almost universally recognized as an input for social and economic development. Government of India spends too little and expects too much. States share a large proportion of the costs of higher education. Plan expenditures are already declining at a fast rate. Higher education is suffering from many problems and thus requires restructuring. However, it cannot be treated by declaring it as a "demerit good". It is important to note that while suggesting a solution to the problem of financing, the peculiar features of higher education and its contribution in the social context must not be forgotten. The "Discussion Paper" of the Government of India has ignored many important points, which are discussed below :

1. There is no doubt that government is in bad need of funds to finance itself and education particularly when recovery rates are miserably lower in higher education. However, the wholesale commercialization will not be the right approach. Developing industry-university interface can go a long way. Industry would benefit in terms of its requirement for better trained manpower whereas university would get finance. It must be well understood that attracting funds for

higher education in certain programmes like management, commerce, computer education will not really be a problem, but the same would not be true for liberal subjects like literature, art and culture, languages, humanities etc. Ignoring this aspect would mean distortions in higher education. It may be pointed out that direct government grant in the United States accounted for more than half of the total expenditure on higher education by all institutes — government and private till late seventies.[10]

2. Higher education cannot strictly be compared with many other types of capital formation, and services, such as, electricity, diesel, fertilizer etc for many simple but important reasons :

(i) Higher education combines the joint features of consumption and investment. It simultaneously generates two types of gains : (a) education and consumption increases factor incomes/earnings to the labour supplied by the educated person (which are internalized by an individual), and (b) investment in education benefits the economic and social system at large. These gains may be categorised as "external gains".

(ii) An educational asset is time consuming, has relatively long useful life and cannot be changed quickly as compared to other competing services. As a result, the relative case for investment in education is low if the appropriate rate of discount is high. Since there is no market which provides a clear indicator for this rate, its determination becomes essentially a matter of public policy.

(iii) The final products of higher education — technicians, doctors, scientists, researchers and managers — have not only helped India to boast of it being the third largest scientific manpower country, but their research, discoveries and inventions have also elevated the name of India in the highly developed industrialised nations of the world. Here, the complementary role of higher education deserves to be well acknowledged.

The complementary role of higher education is also noticed in supplying the trained teachers and simultaneously absorbing the pressures from secondary education which are likely to increase over the period once universalisation of primary education is achieved. Teachers are required for meeting the commitment of "education for all", which has been made recently by the BJP government in its *National Agenda for Governance*. The government has also committed itself to improving the quality and quantity of higher education. The bonafides of the government intentions will be established not by setting up new committees and commissions but by spelling out concrete plans to raise spending upto 6% of the GDP. Higher education must find its share in it.

(iv) The role of higher education in transforming the future generations by contributing to better living cannot be calculated. Positive externalities in the future may arise in the social and cultural climate incident to the widening of horizons and creating better tolerance among different communities.

Education, no doubt, renders a specific service to production and consumption but it poses serious problems for economic analysis, measurement and policy formation. The problems relate to how far expenditure on the creation of human capital should be accounted as investment? How much and what type of education is provided at public expenses? Can the return on education be compared to other investment in alternative uses? What is appropriate time to withdraw government subsidy to higher education? How to handle the divergence of private and social costs and benefits inherent in free or subsidized education? All these questions are not yet clearly answered in the literature on Economics of Education.

3. Government education promotes equal educational opportunity. It has increasingly been favoured by those whose origins are in poorer families, and by those who are women and members of minority communities. Even if it is admitted that these persons from poor or rural poor families are relatively better off in terms of qualities and skills and could have earned better, but they certainly would have not been able to avail of the educational opportunities available in private educational institutions. Thus, one finds a strong and positive demonstration effect of the virtues of higher education particularly in low income and rural communities, in addition generating positive redistribution effects.

4. Higher education brings out many types of "spillover benefits" relevant to the social framework of the country. It has contributed to considerable upward mobility of socially backward and low income communities in different regions because government institutions of higher learning do not have any scope for discrimination with respect to income level, sex, caste, region, and such other considerations.[12] It has helped in fostering more tolerance and cultural interaction resulting into more harmonious inter-community relationships. Milton Friedman, a Nobel Laureate economist, underlines many advantages of higher education : These are : "general advancement of knowledge... greater political effectiveness of a democratic society... greater social effectiveness of society through

the resultant better understanding and mutual tolerance among individuals and groups; the more effective preservation and extension of cultural heritage". He further argues that these advantages would accrue to persons other than those who receive education and, therefore, might justify a subsidy.[13]

Another example of positive externality is the new medicine or invention or discovery by an individual researcher employed in a government institution. It gives benefit to the entire society not in raising the economic activity but in other ways, too. In fact, knowledge or intellectual capital once created becomes a free good in the sense that use of it by one individual does not diminish its availability to the other. It is here, private investment falls short of the social optimal level.

5. The need to support higher education further assumes importance with pressures of liberalization, privatization and globalisation getting intense. The country needs entrepreneurial ability and international competitiveness. Higher education can go a long way in promoting : (a) risk taking, (b) individual responsibility, (c) long range planning, and (d) organization ability; these are so essential for entrepreneurial ability.

The aforesaid discussion shows that the actual gains from higher education in India would be overwhelming at least for the time-being and therefore, it should still be kept as a "merit goods".

VI

Conclusions

Education is the principal mechanism for developing skills, knowledge and training of the human beings. Investing in them through education, therefore, provides the firmest foundation for lasting social and economic development of nations. Government of India is already spending too less as compared to the needs of the people and other countries. The declining spending on higher education is another important concern. The financial problem gets further compounded with higher education showing poor recovery rates. Placing higher education both in Union List and Concurrent List further compounds the problem.

The returns on investment in higher education though important must not be seen strictly in monetary terms. Its wider social context : providing educational opportunity for all, conferring benefits to those who acquire it along with many spill over benefits to others, and its future transformation role, must be seen keeping in view the existing status of education and the future needs and compulsions of the country given its socio-economic and political set-up.

There are many non market effects or externalities which cannot be imputed a monetary value. Gains to the future society from educated females is one such example. Higher education also perpetuates and reinforces homogeneity which is essential for the survival of the society.[15] Its complementary role in green revolution, operation flood, scientific knowledge in areas of engineering, medicine and information technology is also not of lesser importance.

It may be noted that in situations where consumption benefits are shared and cannot be limited to a particular consumer or where economic activity results in social costs which are not paid by the producer or the consumer who causes them or where social context and public interest assumes greater importance, market system cannot solve the entire economic problem. Increasing the user charges beyond reasonable levels would bring many distortions. On balance, thus, positive effects appear to be sufficiently large and outweigh costs and negative effects, if any, to justify the subsidies to higher education by the government.

This, however, does not mean that higher education as it exists in the country, is efficient, socially relevant and, therefore, sould not be restructured. In fact, restructuring is long overdue. It has to be seen now that the skills, understanding and output of higher education generate returns which are equal to the best in the world.[16] But while reforming higher education, the social context cannot be ignored all together to give way to the pure private market system. Student fee no doubt, is an important source of finance for education but that cannot be overemphasized. In India about 15% of the recurrent costs of higher education in India are received from students in the form of fees. The corresponding proportion is the same in public universities in the US and much less in many European universities.[17] Any attempt to increase the user charges beyond a reasonable level would bring distortions in higher education along with accentuating inequalities in incomes and educational standards. Declaring higher education as a "demerit good" would not be the rational decision at least for the time being. The thinking on higher education as a "merit good" can always be reviewed later on. Merit goods are specific, vary from society to society and emerge out of the historical and socio-economic contexts and other such compulsions, which do not remain constant.

Notes and References

1. Alfred Marshall, the first author of a major principles book on economics declares knowledge as the most powerful engine of production. Myint and T. Schultz also underline the importance of human capital. For details *see* H Myint (1954) *An interpreta-*

(Contd. on page 74)

Missing the Wood for the Trees

The Dangers of Following a Segregated Perspective of Education

Binod Khadria*

One of the issues in the White Paper entitled *Government Subsidies in India* (GOI, 1997) which needs to be debated with sincerity and urgency is subsidisation of education. Leaving aside the category of so-called 'public goods' (of pure variety) from the purview of its discourse, the document has classified all economic and social activities primarily into two categories : (1) 'Quasi-public goods' or what it highlights as 'merit goods', and (2) 'Non-merit goods'. Merit goods, according to the White Paper, are those goods and services which have the twin characteristics of (i) substantial externalities, and (ii) amenability to price fixation. Activities, whether in the social sector or in the economic sector, should ideally be subsidized only if they qualify to be called merit goods, the White Paper has asserted. It has then gone on to classify all non-pure-public-goods according to these two qualifications, listing elementary education under merit goods, and all education beyond the elementary level as non-merit goods. Obviously, this dichotomy has brought forth the question of differential pricing for different levels of education : Elementary, comprising the Primary (class I to V) and Middle school (class VI to VIII) education to be provided free, Secondary, comprising the High (class IX and X) and Higher secondary (Class XI and XII) school education to be left undecided for the time being; and Tertiary, comprising all types and levels of higher education including the professional and technical specializations to be provided practically without any subsidies. The dichotomy, which indirectly also derives support from the recent public demands for making free and compulsory education of children aged 6-14 upto class VIII a Fundamental Right in the Constitution, needs to be examined closely because it tends to cloud some of the rationales while distorting a few others that underlie the public provision of education as a whole. Such an exercise will also remove some of the misconceptions underlying the assumed complementarity between the objectives of 'universalization of primary education' on the one hand and 'privatization of higher education' on the other.

One ought to probe no doubt into the rationales for subsidisation with a view to testing the so-called 'merit' and 'non-merit' education. But before doing so, it would be imperative to elaborate a little on the concept of 'public good' which is not only central to the dichotomy but to which qualifications have been added in the White Paper. To quote the White Paper : 'We have to distinguish certain goods and services which, though involving large externalities, fall in a special category of their own. These are known as public goods, and are characterised by (a) the inability to exclude anyone from enjoying the benefits of the service, and (b) any one person's consumption of the service not affecting the consumption of the same by others. In the case of public goods like national defence [however], it is difficult to assess the benefits as well as demand for such services. As a result, normal market pricing mechanism breaks down completely in such cases.. In such cases, government has to bear the full cost of service provision. [Other]... category of goods and services that ideally qualify for subsidies (i.e. priced positively but at less than full cost of production)... are known as 'quasi-public goods' or merit goods. All the remaining social and economic goods/services not falling under the 'public goods' or 'merit goods' category are... 'non-merit goods'. In actual practice, not all goods and services which are subsidized have large externalities.... The costs and benefits of such subsidies need to be weighed against each other. [And]... a periodic review of the entire gamut of subsidies is necessary to make a judicious selection of the subsidies that promote the maximum enhancement of welfare within the overall budgetary constraints of the government" (paras 2.3-2.4; *parentheses added*).

Subjective Substantiality

The thread of the debate on educational subsidies can thus be picked up from around issues, *inter alia*, of costs and financing in education. For this, a two-by-two domain structure of costs and financing common to all levels of education needs to be perceived (*Majumdar* 1983). For example, leaving aside the 'indirect' role of private financing in meeting individual domain of costs as shown in the illustration of the domains (See Box 1) its (the private sector's) 'direct' involvement in the institutional domain has not been significant in India for two reasons : (1) out-of-profit investment in education is usually treated with

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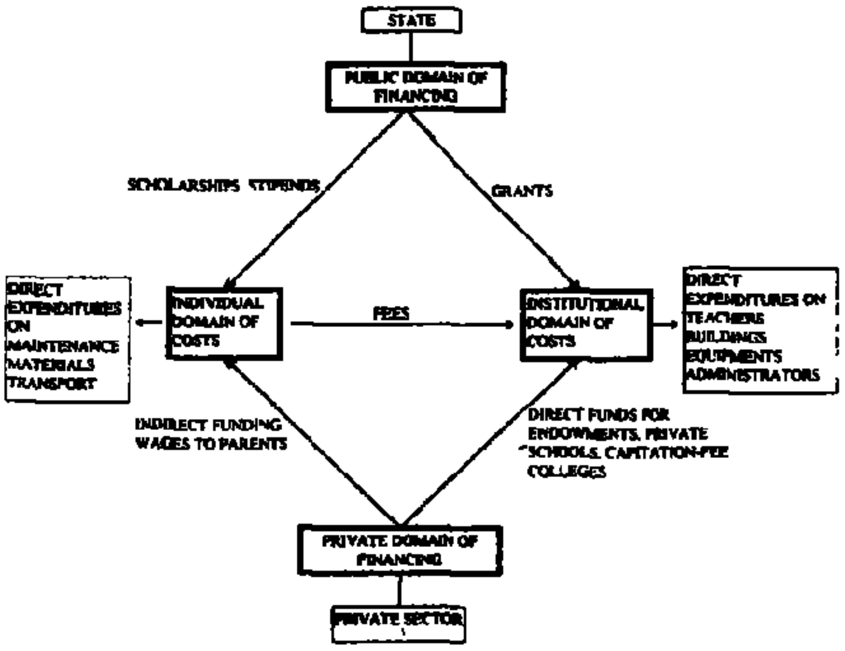
suspicion by the recipient institutions of education, particularly the universities, and (2) for-profit investment in education by the private sector is shy at higher levels of education due to very distant time-horizons involved. Public investments by the centre and the states have therefore been dominating the scene in Indian education precisely because of the reason that society considered the provision of education too important to be left as demand — determined under the private wisdom of consumer sovereignty. Society's rationales behind such state interventions may be classified into four types (*Khadria*, 1989) :

Box 1 : Domains of Educational Costs and Financing


STATE
PUBLIC DOMAIN OF FINANCING
SCHOLARSHIPS STIPENDS
GRANTS
DIRECT EXPENDITURES ON MAINTENANCE MATERIALS TRANSPORT
INDIVIDUAL DOMAIN OF COSTS
FEES
INSTITUTIONAL DOMAIN OF COSTS
DIRECT EXPENDITURES ON TEACHERS BUILDINGS EQUIPMENTS ADMINISTRATORS
INDIRECT FUNDING WAGES TO PARENTS
DIRECT FUNDS FOR ENDOWMENTS, PRIVATE SCHOOLS, CAPITATION-FEE COLLEGES
PRIVATE DOMAIN OF FINANCING
PRIVATE SECTOR

First, and foremost, education generates externalities. In other words, society as a whole enjoys the benefits when some people are getting educated : From a literate and educated neighbourhood; from better skilled workforce; from highly qualified and trained researchers; and above all, from law-abiding citizens who are conscious of both their rights and duties. Left to the individual decision makers, any under-investment in education may be detrimental to the long-term development of the economy and society.

Second, the capital market is both imperfect and incomplete for providing educational loans to individuals. Because education or skills get embodied in the learner, barring a slave economy, qualifications cannot be mortgaged as collaterals against borrowings. In the absence of loanable funds for education, government, therefore, subsidises education.

Third, it is relatively difficult to diversify the risks involved with educational investments by the individuals. Risks of dropping out from the educational stream, of a particular skill becoming technologically obsolete and laid off, or even of facing long periods of unemployment scare-away private investments in education. The state therefore has to provide the subsidies for covering both direct and opportunity costs (i.e. costs of income forgone during education) of education.

Fourth, to equalise earnings distribution, the state subsidises education and makes it more accessible to the lower strata in society precisely because education is an instrument of upward economic and social mobility.

The question posed by the dichotomising of education into merit and non-merit categories is : How significant or "substantial" are these rationales for elementary schooling vis-a-vis higher education or vice-versa? The question has often been answered by saying that higher education is not a pure public good like national defence or environmental, not even a quasi-public good or so-called merit good which, according to the White Paper definition, elementary education is. For higher education, the constraint of the capital market is also not as severe as it is for school education : Loanable funds may be created for skill-oriented higher education because the creditor(s) can at least be sure to some extent that a highly qualified person will be both able to earn an income in the labour market and willing to repay the loan; for school education, the constraints of the capital market are likely to continue. Then again, the uncertainties of dropping out from a school before completion due to forgone earnings are of different kind than the uncertainties of obsolescence and unemployment that discourage and prohibit the private individual initiative in higher education. Society can possibly take care of the latter kinds in the labour market through employment insurance schemes for graduates, whereas income-support mechanisms are unlikely to work that efficiently in coaxing people across the barriers of high opportunity costs (income forgone) when the direct costs of elementary education are high. Finally, complementarity between highly educated and not-so-highly educated labour at workplace can take care of the equity consideration for income distribution to some extent, but no such complementarity will bridge the large inequity between a literate section and a completely illiterate section of the workforce.

The White Paper definition of a merit good based on such subjective comparison of substantiality is, however, grossly different from the textbook definition of merit good (*Mukherji*, 1997). According to one such latter definition, there are certain activities which *merit* state intervention because, left to its own, the private initiative will not be strong enough for the required level of minimum consumption to take place (*Stiglitz*, 1997). As per this definition, a merit good need not necessarily generate any externality at all, neither should it be priceable; all it requires is that the state considers it to be important for society e.g. compulsory education, conscription, vaccination against certain diseases and so on.

Inconsistent Sequencing

Focusing on education amongst all the items on the White Paper list of activities, the merit/non-merit divide is erroneous also because it contradicts many a sequential linkage between elementary schooling and higher education in at least two ways:

First, ironically the White Paper has ignored the linkage between various activities included in its own lists of merit and non-merit goods and is in that sense internally inconsistent. The technical education, training and experience requirements for the research activities included in the list of economic merit goods viz. agricultural research, space research, atomic energy research, oceanographic research, other scientific research, ecology and environment, meteorology are indeed high and are obviously the results of the efforts put in by personnel having university education and/or training at institutions of higher learning. How else could the state expect personnel having the merit good of elementary education alone undertake any of these activities which generate substantial externalities!

The second example of internal inconsistency in the White Paper could be seen in the case of the promotion of the social merit good viz. Elementary education itself. One of the vital inputs for elementary education (often occupying more than 90% of its all input space), viz. qualified and/or trained teachers, is the output of the higher education system. In subsidizing elementary education, the government therefore cannot possibly afford to restrict the production of elementary school teachers by glossing over the importance of higher education in calling it a non-merit good. Moreover, in attempting to contain the *future* unemployment of the graduates by curtailing higher education overnight, the government will be rather landed with the *immediate* unemployment of teachers and non-teaching staff (those laid-off from the higher education sector but who would not be absorbed into the expanding elementary education sector due to differential student-teacher, student-staff and teacher-staff ratios between sectors).

The Little Red Riding Hoods of Education

In reality, there is a paradox thrown up by the educational system in the fact that elitist elementary (and secondary) schools have proliferated in the metropolitan cities and many remote sites. Parents of children attending these schools contribute to the huge profits these schools earn from hefty fees. The apparent paradox can be explained by the fact that these parents accept this so that their wards can in future "overtake" others while competing to gobble up the little 'Red Riding Hoods' — the prized university seats which are limited in number and, at the same time, highly subsidized in India (*See* Box 2). Ironically, however, the high subsidies to elementary education also include indirect state grants to these elitist schools in the form of, say, land at highly subsidised prices (*Mukherji, 1997*). Not only should such subsidies for the institutional domain in elementary education be discontinued, the "overtaking" motivation in the individual domain should also be done away with, even if partially, by stipulating that students from the elite-school background will not be entitled to subsidized fees in higher education. Such students may be asked to pay the full-cost or near-full-cost fees when they attend a college or university or any other public institution of higher learning. For others, i.e. non-elite-school background students, the recovery of subsidies sunk in their higher education can take place through a surcharge on income-tax collected during their earning-life-cycle rather than their learning-life-cycle (*Khadria, 1989*). Availing of policy prescription based on such approach have recently been adopted in Australia, New Zealand and the Netherlands after a lot of deliberation (*Barr and Crawford, 1997*).

To, conclude, it may be said that educational subsidies in India should be regulated not on grounds

Box 2

"Education is a subject on the concurrent list, and subsidies to this sector flow from both the Central and the State governments. In 1994-95, as per National Institute of Public Finance and Policy (NIPFP) estimates, Central government subsidies on education amounted to about Rs. 2400 crore, constituting 5.6 per cent of the total Central subsidies of Rs. 43,047.8 crore. The States provided the bulk of subsidies on education. About one-fourth of State subsidies are on education. The inter-sectoral allocation of State subsidies on education between elementary, secondary, and university levels indicates that about 50 per cent of total educational subsidies go for elementary education. The share progressively falls for secondary and university education. The recovery rate as a whole in this sector is less than 1 per cent. The recovery rate even in the university sector is as low as 1.25 per cent".

"Government Subsidies in India"
Ministry of Finance,
Deptt. of Economic Affairs,
Government of India,
May 1997.

of any unwarranted dichotomy which is based on erroneous definitions of merit and non-merit goods, but on more direct grounds like (i) Adequacy (or shortage) of governmental resources, and (ii) Accountability to society for curbing wasteful expenditure of scarce public resources. The first and foremost step towards promoting these two criteria, however, is to know the unit-cost for various types and levels of education. Then only it would be possible to decide on the optimal levels of subsidies that are required for given quantity and quality-education. The recommendations of both the Punnayya Committee (*UGC*, 1993) and the Swaminathan Committee (*AICTE* 1994) on financing higher education — general and technical respectively — Reports which have othewise been unjustifiably maligned as advocating outright privatisation of higher education in India, have emphasised this point in a revealing manner. Further, while recognising the global tendency towards increase in dependence on tuiton fees, they have not merely blown the popular misconception that higher education in developed countries is largely self-sufficient and free from state support; rather, they have also categorically emphasised that the indispensable role of higher education in economic and technological development cannot, and need not, be discounted by the urgency of advancement at primary and secondary levels of education. But then, all said and done, it has to be kept in mind that because costs and subsidies determine the extent of taxes that are to be collected from the public, the question of educational subsidies cannot be treated in isolation from that of the taxes. Overzealous efforts which result in privatisation of higher education, whether directly or indirectly, will sooner or later also bring the rationale of taxes rather than of subsidies alone to question (*Khadria*, 1990, 1995). If that happens, it will be the sure route to missing the wood for the trees in public finance.

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Subsidies in Higher Education

Mridula Sharma*

The Discussion Paper, *Government Subsidies in India* (1997) issued by the Ministry of Finance aimed at generating an "informed debate and a consensus on the overall level of subsidies as a percentage of GDP and their appropriate targeting". The paper therefore lists all the subsidies visible as well hidden. This article refer to only that section of the discussion paper which gives an estimation of the magnitude of subsidies given to non-merit goods; the magnitude of subsidies accrued to the education sector; and provides a rationale for withdrawal of subsidies to Higher Education sector. Some reactions on the issue of withdrawal of subsidies to Higher Education sector are also given.

Subsidies to Non-merit Goods

The estimation of budget based subsidies in the discussion paper are computed as the excess of costs of providing services over the recoveries from that service. The overall recovery rate (defined as the total receipts as a percentage of the total costs) for non-merit good/services of the central government was 11.65% for 1994-95 and of the state governments 12.87% for 1993-94. Aggregate subsidies of centre and states taken together on non-merit socio-economic services amounted to 10% of the GDP at market prices in 1994-95, whereas combined fiscal deficits of the centre, states and union territories was 7.3% of GDP.

Subsidies to Education Sector

The paper indicates that the subsidies on non-merit goods and services which are less defensible are five times more than those on merit goods. This points towards an unduly large and ill directed subsidy regime.

The central government subsidies on education amounted to about Rs. 2400 crore, constituting 5.6 per cent of the total central subsidies of Rs. 43,047.8 crore. The states provided the bulk of subsidies on education. The inter-sectoral allocation of state subsidies on education between elementary, secondary and university levels indicates that about 50 per cent of the total educational subsidies go for elementary education. The share progressively falls for secondary and university education. The recovery rate as a whole in this sector is less than 1 per cent. The recovery rate in the university sector is as low as 1.25 per cent.

Reasons for Withdrawal of Subsidies to Higher Education

The peper gives following three reasons for withdrawal of subsidies to higher education :

Economic Rationale

The paper puts forward that in principle subsidies should normally be advocated when the social benefits of a particular commodity or service are greater than the sum of private benefits of the consumers. This difference between the social benefits and sum of private benefits arises due to what economists call, externalities. The presence of externalities leads to breaking down of normal market pricing mechanism. If provision of such goods (where externalities are present) are left to individuals, it may lead to under investment or malinvestment which would be deterimental to long term growth and development of a nation. According to the paper the category of goods and services that ideally qualifies for subsidies on economic grounds should have two important characteristics : (i) They should give rise to substantial externalities, and (ii) It should be possible to price them even if imperfectly. These goods may be termed as quasi-public goods or merit goods.

The paper further adds that as higher education does not fulfil the above stated economic criteria (i.e. presence of externalities), it does not really justify the provision of subsidies. Moreover it does not generate substantial externalities as much as the elementary education does. One does not even find significant difference between private and social valuation for higher education by the user. The benefits of subsidies for higher education, according to this paper accrue primarily to the recipients. Therefore atleast on economic grounds higher education does not really fall within the ambit of merit category. Hence economic rationale sugests that it need not be subsidised.

Social Considerations

Subsidies according to the paper are provided for redistribution of income and also to ensure meeting minimum needs for all. The paper argues that the objective of equality and social justice could not be achieved through higher education in India be-

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cause a significant portion of the benefits of subsidies in higher education accrue to the better off sections of society.

Reduction in Deficit

Paper indicates that there is a tremendous scope for fiscal corrections through a more effective strategy of cost recovery through user charges for non merit goods/services. There is a clear scope for increasing user charges in areas such as education.

As per estimates given in the paper, the aggregate subsidies, central and state taken together on non-merit services amounted to 10.71% of GDP in 1994, whereas the combined fiscal deficit of the centre states and union territories was 7.3% of GDP. With government's resolve to bring down the fiscal deficit to 4% of GDP in the next budget any reduction in the quantum of non-merit subsidies would have a direct and immediate impact towards reducing the deficit. By using the relevant user charges in the nonmeirt services, the government's fiscal deficit profile can be improved tremendously. Any increase in the relevant user charges would lead to a more than proportionate increase in recovery rate due to two distinctive effects, viz. (i) increase in user prices, and (ii) reduction in quantity demanded. This is particularly ture of higher education. It is therefore reasonable to set targets for reducing the subsidy rate for non-merit goods from 90 per cent to 50 per cent in three years, with a further goal of reducing it to 25 per cent in another two years.

Some Reactions

Before we debate the points put forward in the paper for supporting withdrawal of subsidies and increasing user charges for reducing deficit as well as demand for higher education, it would be pertinent to give in brief some realities of Indian higher education system.

I. *Realities of Indian Higher Education System*

Presently human resource development in India is at a critical juncture. It needs greater support for developing appropriate capabilities and competitive strength to respond to the challenges of development, self-reliance and liberalisation. It is in fact human resources that have countributed to the faster development of countries like Japan and Korea and have also sustained the development process in countries like USA, France and Germany. These countries have consistently followed the policy of developing human resources through allocation of six to eight per cent of GNP on education and a good proportion of GNP on R&D, whereas in India the policy has been to consistently allocate inadequate resources, never exceeding three and a half per cent of GNP and less than 1/6th to 1/5th of this amount to higher education.

The present state of higher education with (a) over emphasis on liberal arts education; (b) traditional combination of courses in three major streams, namely, arts, science and commerce; (c) traditional combinations and specialisation in professional courses imparted by IITs, medical and engineering colleges; and (d) the poor quality of liberal arts, science and commerce education and resultant unemployable graduates could be better explained by (i) the inadequacy of resources allocated to education; and (ii) uncertain policy on the subject. The policy has swung between restriction of enrolment since late 50's to expansion of enrolment owing to the pressure of social demand. Inadequate allocation of resources and pressures of demand for higher education have resulted in the provision of less expensive and inferior higher education both by voluntary and government agencies to the youth of the country. This has had its own impact on the education system and the society.

Since the restriction of enrolment was neither desirable nor possible, best course for the policy makers would have been to reform the higher education system by making it more diversified, more qualitative and through it developing right kind of capabilities among the youth which enrolled for higher education. And this could have been done only by allocating adequate resources to it. This crucial aspect of higher education and development of capabilities among the youth unfortunately missed the attention of the policy makers and planners.

The prescription from international organisations and thinkers was also in favour of restricting higher education and drying its resource base through suggestions for its self-financing. They did not view higher education as a contributor in India's development, whereas they did see it as a contributor in their own countries. Secondly, they also viewed that school education would contribute to development and not the higher education and R&D. Therefore they suggested that school education should be supported by the state and not higher education and R&D. Many Indian scholars also echoed the same view which is manifest in the paper under discussion where withdrawal of subsidies is considered to be (a) an effective measure of reducing government deficit, and (b) an increase in user charges in higher education is considered as a step leading to reduction in the demand on the one side and, raising resources for the government on the other. But such group of thinkers has not visualised the repercussions of such thinking/policy in the long run.

The question of withdrawal of subsidies to higher education sector, in India has to be considered in a much more comprehensive way. The question is : Is India looking for higher education as an instrument for mobilisation of resources. If this is true, then the next question which should be considered seriously is, what amount of resources could be mobilised by withdrawing subsidies, and at what cost? There are certain roles which a Nation State performs. Education, health, internal security, external security are among those which a state performs on priority basis, because of indivisibility and importance of these services in the development process.

In general, resources are scarce and more so in any developing country. India, therefore, is no exception. The best course, therefore, is to see optimal allocation of these resources for various sectors, keeping in view the priority of each of the sectors. As far as one knows, this has never been a topic of discussion. The critical questions therefore are : how optimally and efficiently resources are allocated to different economic and social sectors? Does our economic management system check the leakages and wastage of resources? Perhaps, our wastage and leakages are the highest, the policy of withdrawal of subsidies from higher education is not a comprehensive answer to the fiscal and financial problems of our government. It requires more professional management and hard decisions.

II. *From the Stand Point of Economics of Education*

The treatment of higher education as a non-merit good poses serious conceptual problems for those concerned with economics of education. It is rather their contention that higher education generates externalities and society as a whole enjoys much higher external benefits from higher education than those enjoyed by an individual. Economists since the time of Adam Smith have believed that investment in human beings helps in building technical, professional and other capabilities in human beings which ultimately determine the long term growth and development of a nation. No country in the world can afford to leave decisions about investment in higher education to the free play of market forces. The investment in this sector if left to individuals will be much less than the desired level which will be detrimental to the growth and development needs of the country. No doubt higher education promises a higher life time return of income to an individual but its contribution to society is much more. The treatment of higher education as a non-merit good in the paper therefore is not justified on economic grounds. Moreover presence of externalities in higher education (for the reasons given above) is much more than in the case of primary and secondary levels of education. This fact is also accepted indirectly in the paper itself. (—"It contributes to productive efficiency and improves occupational mobility etc of the system"—[6.5]). It is therefore logically not correct on economic grounds to exclude higher education from the category of merit goods/services if primay education is to be included in that.

III. *Lack of Empirical Evidence*

The statement that most of the subsidy to higher education accrues to better off sections of society is not supported by empirical evidence though there are a few studies available in literature, which provide contrary evidence. A study conducted by AIU (on Delhi University students) sometimes ago, indicated that quite a good number of students of Delhi colleges came from middle and lower middle income groups.

Even if we accept the argument that there are a number of beneficiaries in higher education system who can afford to meet the cost of education, the important questions are to find out the number of such beneficiaries, and (b) amount of resources which can be mobilised by this number? Yes, there are nearly 30 per cent of the students, who can easily pay higher fees rising upto the cost of education. But what about the other 70% who can afford to pay a fraction of the total cost of education than what they are paying now. Enhancing fees for those 70 per cent of students would mean a lot for them, and among them particularly for those who belong to SC, ST or backward classes. If we have to mobilise resources from those 30 per cent of the people who can afford it, then we should have more progressive system of taxation than what it is today. And if we want to tax the beneficiaries then we should tax the ultimate beneficiary, i.e. those who are employers of human capital and not the receivers of education. This could be another instrument of mobilising resources.

IV. *Subsidy Cannot be Time Bound*

The suggestions in the paper that (a) subsidies should be used for well defined economic objectives, and (b) a clear limit should be set on the duration of any new subsidy may be good on economic grounds but these are not acceptable on social considerations. Economic rationale cannot be the only criteria for

(Contd. on page 82)

Subsidization of Higher Education in India
Rationale and Extent

Marjorie Fernandes*

With the adoption of a policy of structural adjustment and liberalization of the Indian economy in the 1990s, there has been a tendency towards increased privatization in all spheres of economic activity. Also, there has been pressure to reduce the fiscal deficit by curtailing public expenditure, which in turn has implications for the resource crunch faced in the Ninth Plan. It is in such a context that the paper on *Government Subsidies in India* brings out the extensive subsidies provided by both central and state governments in India to predominantly "non-merit" goods and services rather than "merit" ones and hence calls for considerable reduction of such subsidies "from 90% to 50% in three years and further to 25% in another two years". The present paper is concerned with the classification of higher education as a "non-merit" good implying that public expenditure on higher education is a "non-merit" subsidy which needs to be sharply reduced. The paper is divided into four sections. The first section takes a critical look at the distinction made between "non-merit" and "merit" goods/services on the basis of the literature on public finance. The second section examines the rationale for subsidizing higher education. Some suggestions for determining the extent of subsidy to higher education as well as some alternatives to reduced subsidization are discussed in the third section. The fourth and last section is a summary and concluding section.

I

The paper *Government Subsidies in India* (hereafter referred to as 'The Paper') points out that "subsidies should normally be advocated when the social benefits of a particular commodity or service are greater than the sum of the private benefits of the consumers ... due to what economists call 'externalities'" (Pp. 3-4). When there is a difference between the private valuation of the benefits from certain goods/services and their true value to society, the normal market mechanism will not operate efficiently to ensure the appropriate level of their production and/or consumption. Subsidies can provide the necessary corrective in such cases, apart from being used for redistributing income and providing minimum needs of people. Inoculation against infectious diseases, sanitation, environmental protection, basic education and even R & D by firms are given as examples of activities involving substantial externalities and are termed as "merit" goods/services for which subsidies are justified. In contrast, higher education is lumped with items like electricity, diesel and fertilizers in the category of "non-merit" goods/services in which "there are normally no significant differences between private and social valuations" (p. 2). Subsidies on such items having limited or no externalities and also not fulfilling the equity objectives (e.g. when higher education subsidies are appropriated by the rich) are not justified and hence need to be sharply reduced if not abolished altogether. Of the total "merit" and "non-merit" subsidies of Rs. 1,37,338 crore (14.4% of GDP) given by the central and state governments in 1994-95, the subsidies on "non-merit" goods/services amounted to Rs. 1,02,145 crore (10.7% of GDP) or almost three times the subsidies on the "merit" goods/services. The substantial subsidies on the "non-merit" category constitute almost a 90% subsidy rate as the recovery rate is only 10.3%. A sharp reduction in the large magnitude of "non-merit" subsidies is recommended which obviously would result in considerable reduction in public expenditure and the fiscal deficit.

The validity of the crucial distinction between "merit" and "non-merit" goods/services made in 'The Paper' needs to be considered in the light of relevant literature on the subject. The distinction between private and public goods/services is well-recognized in the literature of public finance (*Musgrave & Musgrave*, 1989). Unlike private goods/services, public goods/services are characterized by non-rivalry and non-excludability in consumption. As a result, the normal market mechanism breaks down in the case of public goods/services and the government is required to ensure their provision. The costs of provision of some public goods like national defence (termed as "pure public goods") are completely met by the government. Such 100% subsidized goods have been excluded by 'The Paper' when estimating the extent of subsidies provided by the government in India. In between the "pure private goods" and "pure public goods" are the "quasi-public goods" which are not completely non-rival and/or non-excludable in consumption. Some government intervention in the form of partial subsidization/provision is

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required for the "quasi-public goods". Such intervention is also required when externalities are involved in the case of goods/services despite their having the private goods' characteristics of rivalry and excludability in consumption.

It should be noted that in a democratic country, the government's intervention considered so far is based on the assumption that consumer tastes and preferences reign sovereign. As the market may not always express the tastes and preferences effectively, government intervention is designed to more effectively account for consumer desires. As against such "social wants" determined by consumer desires (whether privately or through the elected government) there are "merit wants" based on the assumption that consumers may not express the "appropriate" desires. Government intervenes by overriding the consumer tastes and provides subsidies to encourage the provision and consumption of some goods/services which are in accordance with the "merit wants".

Against this theoretical background of the classification of goods/services as a basis for their subsidization, one may evaluate the classification adopted in 'The Paper'. The term "merit good" seems to be inappropriately used to include "public goods", "quasi-public goods" as also "goods involving substantial externalities" (p. 4). The remaining goods which government subsidizes despite their not involving any significant externalities are termed "non-merit" goods. As indicated above, the term "merit good" has an entirely different connotation from the one used in 'The Paper'. The term "non-merit good" does not appear in the literature. Perhaps, it was coined to reflect the fact that the good does not merit or deserve a subsidy because it neither involves externalities nor meets other objectives like the equity objective.

It is not clear from 'The Paper' on what basis the assertion is made that there are "no significant differences between private and social evaluations" or externalities in the case of "non-merit" goods in contrast to the case of "merit" goods. Thus, for example, 'The Paper' considers higher education as a "non-merit" good, ignoring the fact that it affects both elementary education and research which are considered as "merit" goods. Again, if some subsidies do not meet the equity objective (because a significant portion of them are appropriated by the middle to higher income groups as, for example, in the case of higher education), it is because of the poor design and targeting of the subsidies. Instead of abolishing subsidies for not meeting the equity objective, improvement in their design and targeting needs to be sought.

II

Despite the very different nature of higher education as compared to items like electricity, diesel and fertilizers, 'The Paper' lumps all these items together as "non-merit" goods and regards the subsidies given on them as "non-merit subsidies". With respect to higher education, the basis for the assertion that it is a "non-merit" good receiving "non-merit" subsidies has not been given. It is not clear whether higher education is considered as a non-merit good because its externalities are insignificant and/or because the past subsidies given to it do not meet the equity objective (the two stated criteria used for distinguishing between "merit" and "non-merit" goods) or because of any other reason.

In contrast to the position taken by 'The Paper', a rationale for subsidies to be given to higher education needs to be built by examining various arguments which can be put forward in favour of higher education being subsidized. These arguments are as follows :

First, considering the extent of graduate unemployment in India, there seems to be an impression that there is over-production of students with higher education, thus implying that subsidies to higher education are not justified. This impression is contrary to the fact that the country with just about 6% of its youth enrolled in higher education is far behind several other countries, both developed and developing, which have around 20% enrolment. The graduate unemployment may be due to the mis-match between the world of work and the world of education, irrelevant and/or badly taught courses of study etc, rather than the over-production of the highly educated *per se*. To increase enrolment in higher education, more and not less funds need to be devoted to higher education and a considerable portion of the funds need to be in the form of subsidy rather than student fees. There is no denying the fact that the funds need to be better utilized than at present.

Second, the tendency to split education into different categories like elementary and higher education (with subsidies being justified for the former and not the latter and diversion of resources being recommended from the latter to the former) is hazardous for the country's human resource development. There is no contradiction between elementary and higher education; they are complementary — a better quality of elementary education requires quality higher education. Education as a whole should be a priority and receive more funds. Even as early as 1964-66, the Kothari Commission on education while rejecting the "primary versus higher education" argument as untenable had recommended at least 6% of GNP for overall education. But even after 30 years, the entire educational expenditure remains at less than 4%. This fact of non-availability of adequate funds for all sectors of education needs to be recognized. In this context, the observations of the more recent Punnayya Committee on financing of higher education are relevant. Thus, its statement that "there is no denying that while primary education is fundamental to the nation, higher education determines its economic and technological progress" implies that each level of education has a definite and important role. The Committee further stated that "while it is mandatory that the nation achieves universal elementary education and total literacy, at the same time, it cannot afford to neglect and relegate to a neglected position our quest to achieve global standards in higher education. The Committee deprecates the tendency which views education in a truncated fashion and sets one sector against another" (p. 18).

Third, research conducted outside the higher education system is regarded by 'The Paper' as a merit good for which subsidies can be justified and rightly so. However, higher education which also has research amongst its various functions is considered by 'The Paper' as a "non-merit" good for which subsidies are not justified. This view is obviously incorrect. Without adequate funds through subsidies, universities would have poor research infrastructure facilities like libraries with out-dated journals and laboratories with discarded technologies. Consequently, such universities would not be able to produce quality research or even quality teaching linked to such research. Universities with their unique symbiosis of teaching and research cannot be substituted by pure research institutions.

Fourth, although precise empirical evidence may not be available on the nature and extent of externalities associated with higher education in India, piecemeal evidence is available from other countries. For example, research and postgraduate training are estimated to result in low private returns while their total costs are substantially high. Fairly large subsidies are given to support faculty and student research and postgraduate training in institutions of higher education since it is felt that scientific and industrial progress cannot proceed without the availability of highly skilled professionals trained by such institutions (Cohn & Geske, Pp. 361-2). In the absence of such subsidies, research and postgraduate training is bound to be neglected. Considering that postgraduate education is based on undergraduate education, adequate financial support for quality undergraduate education is required. As in the case of postgraduate education, the relatively low private returns to undergraduate education in relation to its costs warrant financial support through subsidies for undergraduate education. In the Indian context, advances in various fields like health, agriculture, information technology etc, have been made possible through the development of higher education financed by considerable subsidies in the past.

In addition to the externalities associated with research in higher education institutions, a whole range of other externalities stemming from higher education are catalogued in the available literature, even if they are not always precisely measured. The externalities "range from the interpersonal level (more effective and efficient parents, the augmenting of the output of fellow-workers, etc) to the community and regional level, through to that of the nation as a whole" (Ziderman & Albrecht p. 10). The provision of necessary human capital inputs for economic growth and development and the assumption of entrepreneurial and leadership roles by the highly educated are cited as some examples of the latter type of externalities of higher education. Such externalities are important, even if they may not be sizeable to warrant large subsidies.

Fifth, by treating higher education as a "non-merit" good, 'The Paper' implies that the principle of full-cost recovery in higher education should be followed. The available evidence for several countries shows that nowhere is higher education completely financed by its recipients (students). Thus, the Punnayya Committee found that fees formed less than 14% of total educational expenditure in Britain, less than 4% in France and even in the U.S., less than 40% in private institutions and less than 15% in public institutions. This dispels the popular notion that fees contribute a significant share in the financing of higher education in developed countries. In India, even state-run institutions of higher education by charging fees of all kinds from the majority of their students are able to recover about 15% of their expenditure (*Tilak*, 1993). In India, unlike some other countries, fees are not the only costs of higher education for individual students. There is hardly any or no subsidy to meet their substantial expenses like those on books, travel, room, boarding etc, which have to be incurred for pursuing higher education. In recent years, with private institutions of higher education hiking their fees, especially for professional courses, the ratio of fees in public to private institutions is much higher in India than elsewhere, thus implying even lower subsidies in private institutions as compared to public institutions.

For example, in India, the ratio ranges from 1:19.8 in Maharashtra to 1:43 in Manipal whereas it is only 1:5.9 in the U.S. (Tilak, 1994).

III

The arguments in favour of subsidizing higher education should not be taken to imply that all is well with the existing level and pattern of subsidization of higher education in India. It is important to make a distinction between different types/courses of higher education and different recipients of higher education when determining the extent of subsidization in higher education. Offering uniform across-the board subsidies to all higher education students, irrespective of their academic and socio-economic backgrounds, is inequitable as well as inefficient and hence would not be justified. Some relevant suggestions for determining the extent of subsidy in higher education are :

First, the recent trend of charging higher fees (implying lower subsidies) for courses of professional education like management, medicine and engineering than for courses of general education is in the right direction. The former courses are characterized by considerably higher private returns as well as considerably larger percentage of students from relatively well-off socio-economic backgrounds as compared to the latter courses.

Second, the ridiculously low tuition fee of around Rs. 15 per month for general education which has remained constant for decades needs to be raised. India is perhaps the only country in the world where college education for many students is much cheaper than school education. No doubt, the private returns are very low for the recipients of such general education. Also, there are political compulsions for keeping a large number of unemployed youth in colleges as otherwise they would take to the streets fomenting social and political unrest. If the present high level of subsidies to general education is reduced and fees raised at least somewhat, there is a possibility of students taking their studies more seriously, pressurizing their teachers for better teaching and more relevant courses etc, so that ultimately the private returns to general education may be higher than at present. Surely, this is a more efficient and better alternative to 'baby-sitting' financed by a high level of subsidies to courses of general education in colleges.

Third, the argument that higher fees resulting from the reduction of subsidies to higher education will result in financial hardships for meritorious students coming from relatively low socio-economic backgrounds can be met by making available scholarships and low-interest loans to such students. In fact, the better targeting of subsidies in higher education as implied in such scholarships and loans will enable higher education subsidies to fulfil the equity objective more effectively than at present.

Fourth, in the context of the paucity of funds available to the government for meeting the expenditure on higher education, it becomes necessary to recover a greater portion of the costs of higher education. This recovery should not be done merely by increasing fees; even the strong proponents of privatization of higher education argue for not passing on a large share of the total costs to students. There is need to recover costs from other sources such as sale of publications, sale of computer services as also other kinds of output, faculty consultancy, renting of university guest houses/hostels to visitors, interest from endowment funds, donations, alumni contributions, industry-funding of research, etc. In this connection, it is relevant to point out that over the years, the share of non-governmental sources of finance for higher education has declined. Thus, for example, the Punnayya Committee found that fees which constituted 15 to 20 per cent in the 1950s had dwindled to 2 to 3 per cent in 1992-93 while other non-government sources of finance did not increase to match this decline — in fact, their share too declined albeit by a lower extent than fees. For any given level of higher education expenditure, the larger the recovery of costs from various non-governmental sources, the less would be the need for subsidies. There is widespread agreement that the costs to be recovered should be confined to recurrent costs alone; capital costs should be borne by the agency, whether private or government, which set up the higher education institution.

IV

The view presented in the paper on *Government Subsidies in India* ('The Paper') which regards higher education as a "non-merit" good and subsidies to it as "non-merit" subsidies has been shown to be erroneous. The classification of goods/services into "merit" and "non-merit" categories, as adopted in 'The Paper', is shown not to conform to the relevant distinctions in the literature on public finance. Hence, the classification is not very meaningful in judging whether subsidies to higher education are justified or not. Several arguments have been put forward in support of the subsidization of higher education — the low rate of enrolment in higher education in India as compared to many other countries; the complementary nature of higher education in relation to elementary education and research in institutions outside universities (both of which are accepted as "merit" goods for which subsidies have been justified by 'The Paper'); various types of externalities of higher education, especially at the research and postgraduate level, which are important even if not all are considerable; the universal absence of full-cost recovery implying the universal subsidization of higher education, albeit at varying rates in different countries, etc. In determining the extent of subsidy for higher education, it is important to distinguish between different courses of higher education involving different costs and returns (both private and social) and between students of different socio-economic backgrounds. Instead of a uniform across-the-board subsidy for higher education which is both inefficient and inequitous, varying subsidies are called for. While higher education countries to be subsidized, there is also need to augment the funds available for higher education from various non-governmental sources, apart from fees.

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Subsidies in Higher Education

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provision of subsidies in any society. Social justice is a constitutional obligation of any government. Provision of subsidies for achieving redistribution of income is as important as the economic considerations. Similarly subsidy on education cannot be time bound. It has to be an ongoing responsibility of a nation. We have examples in the world of countries, most important USA, where higher education is still the responsibility of the state even after achieving a reasonable rate of growth and development.

V. *Increase in User Charges*

A suggestion to effect reduction in the growing demand for higher education through increase in user charges will have serious repercussions on the future development of our country. We have not yet reached a stage where we can think of curtailing the growth of the system of higher education. Development of skills, knowledge, R&D are essential for the development of a nation and higher education provides all these. We therefore cannot afford to neglect this sector. Moreover if we compare the enrolment in higher education system of India with that in USA, we find that Indian system has a total enrolment of only 4.6 million students (1991). This number accounts for only 4% of the population in the age group 17-23 years. Against this the institutions of higher education in USA enrol nearly 13.7 million students in all accounting for 38.3% of the population of the age group 18-23. We have still not reached a stage where we can think of curtailing the expansion of higher education in India. What is required is a right kind of qualitative education.

The increase in user charges is also not acceptable on considerations of equality of educational opportunity because people who cannot afford higher charges will be deprived of higher education facilities. Only those who are able to afford will take higher education and they may not necessarily be academically merited. Capitation fee charging professional colleges are a case in point.

Disparities initiated at school level by introducing higher fee charging convent/public schools and low fee charging municipal schools would be further accentuated by similar gradation of colleges. This policy would therefore be contrary to the philosophy of equality of opportunity of education. It is therefore contended that any policy suggestion leading to curtailment of the enrolment of higher education would be deterimental to the long term socio-economic development and growth of the country. This does not mean that expansion in higher education can be left without any control. It has to be linked to the developmental needs of the country. What is required is a structural change in the system and not the curtailment of growth. This can be achieved by having a suitable long term need based developmental planning of education sector. But the finances have to come from the government.

CAMPUS NEWS

National Conference on Distance Education

"In view of the advancement of communication technologies and the latest global trends, Indian Distance Education should not lag behind the new system", said Dr. Upinderjit Kaur, Minister of Technical Education, Punjab. She was inaugurating the Fifth National Conference of Indian Distance Education Association (IDEA) on Sustainable Development of Distance Education — Opening Windows of Technology for a Better Future jointly organised by IDEA and Technical Teachers' Training Institute (TTTI), Chandigarh. The deliberations were mainly focused on policy measures on the Emerging Learning Environment and Distance Education (DE), Science & Techonolgy Education through Distance Mode, DE vis-a-vis Technology and Structure and Management Needed for Sustainable Development.

Dr. Kaur appreciated the trends of growth as popularity and acceptance of Distance Education as an alternative mode of education. She symbolised this concept with "Knowledge for All, Education for All". She laid emphasis on the increasing role of Distance Education and Continuing Education. Dr. Kaur was of the opinion that the concept of knowledge for all and education for all can only be achieved through Distance Education and non-formal modes. She said that in today's competitive world knowledge had become international currency the world over. Personal, societal and national needs in the area of education could only be met by laying major emphasis on DE and making curricula relevant to the needs of society, she felt and observed that women and girls had immensely benefited from DE world over.

Prof. Bakhshish Singh, President, IDEA and Former Consultant, UGC (Distance Education), in his welcome address, threw light on the contribution of DE in India. He said that seven open universities were likely to start functioning in near future. At the same time more and more DE institutions were also being started under dual mode systems. This will, in future, not only help start more relevant courses but also increase the accessibility to cover large number of heitherto uncovered population. Prof. Singh said the use of present day technologies like teleconferencing, multi-media, and telecommunication technologies would help in globalisation of technical education in the country.

Prof. S.K. Gandhe, former Pro Vice-Chancellor, IGNOU, in his keynote address, spoke about the wide spread illiteracy in the country. He said that 50% of the total population and 65% of women were illiterate. The conventional education system, he felt, needed to be supported by DE mode and continuing education programmes. He said that the country already had over 230 conventional universities with an enrolment of approximately 60 lac students. Many of the conventional approaches to education were increasingly becoming redundant and in this fast changing scenario, DE which has potential to make use of audio-video, internet, intranet, and multi-media, had great potential in removing illiteracy from the country, he opined.

Dr. S.K. Bhattacharya, Principal, TTTI, Chandigarh and co-sponsor of the conference spoke on the role of continuing engineering education and distance learning in improving the quality of technical manpower in the country. He gave a brief account of role played by TTTI in revamping technical education system in the state of Punjab in particular and other states in general and suggested that Directorates of Technical Education of various states should make use of recommendations of this conference.

The valedictory session of the conference was presided over by Dr. Gopal Saksena, Director, Commonwealth Educational Media Centre for Asia. Prof. S.C. Bhatnagar, Former President NCDE, who delivered the valedictory address, said that distance education had now entered a new phase of using new technologies appropriately to bridge the distance gap while redefining the roles of teachers and educational institutions in aiding and advising the learners in completing their studies. Further, distance education institutions, equipped with adequate infrastructures, could provide solution to many problems faced by the system. Prof. Pani, the Coordinator of conference sessions, presented an integrated picture of conference recommendations for widening the scope of Open Learning and teaching of science and technology courses through the mode of distance education. Dr. Gopal Saksena, in his presidential address, pleaded for extensive use of appropriate technologies and providing learner-orientation to institutional support structures. He said that international agencies including COL were coming forward in a big way to help DE institutions in sharing technologies and exchange of available expertise for mutual benefit.

124 delegates from across the country attended the conference at which 68 theme papers were presented.

Workshop on Information Technology

The Oriental Institute of Science & Technology, Bhopal recently organised a 2-day Workshop on Information Technology with special reference to Internet. The Workshop was inaugurated by Dr. S.N. Dwivedi, Director General, M.P. Council of Science & Technology. The participants were unanimous that the Workshop would help development of IT and Internet network for industrial and other organisations in Madhya Pradesh.

Mr. Atul Sinha, Principal Secretary, Department of Manpower Planning and Higher Education, in his address, said that Madhya Pradesh had immense potential for the application of latest developments in information technology for the faster development of the state. He assured that any proposals in this regard would be fully supported by the state government.

Mr. Sinha said that the entire world was going through information revolution and any country or any society not taking advantage of such revolutionary changes would lag behind.

Narrating a number of anecdotes, Mr. Sinha disclosed that he could get detailed information about the Jabalpur Earthquake, which occurred in May last year, within seconds in Rome (Italy) where he was posted at that point of time. This, he remarked, was some thing remarkable because people in Jabalpur itself came to know about the earthquake much later than he had come to know of the same in Italy.

Similarly, Mr. Sinha said that the recent developments in Indonesia reached the globe within seconds; thanks to the information revolution sweeping the world.

Mr. Sinha complimented the Oriental Institute of Science & Technology Chairman, Mr. K.L. Thakral and the Programme Director, Dr. V.D. Garde for organising a workshop on such an important topic. He suggested that OIST and other institutions should come forward to help promote the application of information technology in various areas of the state and national economy.

The Workshop was attended by 18 senior level officials from BHEL, NTPC, Crompton Greaves, HUDCO, Permali Wallace, GEI-Hamon Industries, CG-Elin, University of Sagar and Department of Public Relations, M.P. Government.

Poona University Development Trust

Dr Arun Nigavekar, Vice-Chancellor of University of Poona, is reported to have conceptualised a 'University of Poona Development Trust' to cater to the developmental needs of the university and the affiliated colleges.

Speaking at a 'meet-the-press' programme, organised by the Pune Union of Working Journalists (PUWJ), Dr Nigavekar said he had been toying with the idea for quite some time. "It would be the first of its kind in the Indian universities," the vice-chancellor said. Such trusts do exist in the American universities.

The trust should be able to offer soft loans for some of the developmental projects of the university or colleges at a lesser rate of interest. The loans could also be extended to some venture projects after undertaking a feasibility study which could become viable after a few years, he felt.

There are instances where the university requires to hire services of experts in certain fields, but the administration is unable to do so because of a number of hurdles and rules. Such a trust could help the university in its endeavour, he said. Similarly, the Trust could extend loans to students also, Dr. Nigavekar said and added "it is my dream to initiate this project."

Asked what amount of corpus he had in his mind for the trust, Dr. Nigavekar said he had no such limit, but the fund could be kept building.

The trust, the Vice-Chancellor said, should have experts from the fields, of finance, industry besides the Vice-Chancellor to guide the needs of the university or the colleges.

Dr. Nigavekar, who has studied the functioning of about 120 universities said he would be working on improving the quality and economic stability of the University of Poona.

Emerging Technologies in Mass Communication

A two-day national seminar on 'Emerging Technologies in Mass Communication' was organised by the Department of Communication Management and Technology of Guru Jambheshwar University recently.

Inaugurating the seminar, the Vice-Chancellor, Prof. K.L. Johar, underlined the need for utilising the rapid developments in the communication technology for bringing about social change. He said the media had the potential to act as catalyst for bringing about this change.

Senior journalist Mr. Shyam Khosla said that teaching and training in mass communication facilitated by the modern technology had helped overcome the faulty hit and trial methods. He pointed out that mass media could not be thought of as part of consumerism. It had to play an important role as the fourth and integral pillar of democracy.

Mr. Vijay Sehgal, Editor Dainik Tribune, said the technology for transmission of news had moved from morse to modem and the newspaper production had moved from metals to microchips.

Prof. B.K. Kuthiala, Dean, Academic Affairs, said although the adoption of new technologies was fast, it was not universal and uniform. He pointed out the new developments had led to "demystification" of technology.

Workshop on Bhopal Library Network

A workshop on Bhopal Library Network was organised by the Library-cum-Documentation Centre of the MP Council of Science & Technology, Bhopal. Inaugurating the workshop Dr. PS Dubey, Dean, Vikram University, Ujjain highlighted the need of such networks and emphasised that scientists/students and others will be benefited from such networks. This will be more economical exercise.

He also informed that UGC was providing Rs. seven lakhs for creation of internet in the universities. This should be interlinked to achieve the real objective, he added.

Dr. S.N. Dwivedi, Director General, MPCST, Bhopal, who presided, said under the new economic policy, India was now linked with international market which needed state of art technology. The precise information technology alongwith its reliability was the need of the hour. He cited examples of DELNET< CALIBNET and MALIBNET etc and justified the creation of Bhopal Library Network.

He informed that under this network all local libraries will be linked together and will help access to all target groups. Dr. V.K. Varun, Sr. Scientist, NISSAT, New Delhi also justified creation of such networking and informed that its demand was increasing day-by-day.

The participants were taken to the council's documentation centre where library documentation through the use of software alongwith Internet facilities had been established. Dr. Varun and Dr. Bose apprised about hardware and software required for such networking.

Orientation Programme for Teachers

The Academic Staff College, University of Rajasthan, recently organised Tenth Anniversary celebrations with the commencement of 37th Orientation Programme.

Speaking on the occasion, Shri V.I. Rajagopal, Vice-Chancellor of Rajasthan University emphasised that ASCs should extend their frontiers to the campuses of affiliated colleges. He called upon the academia to suggest alternatives to the present examination system.

Prof. Jasbir Jain (former Director, ASC) in her keynote address on 'Education and Democracy' put forth that "unless we learnt valuing values we won't be able to deliver the best in order to develop the society." She added that quality education was the only panacea to protect democratic values.Lack of motivation, she felt was the prime cause of declining standards in education.

Shri Anil Vaish, Secretary, Higher Education, Govt. of Rajasthan, was of the opinion that ASC, Jaipur was working as a nucleus. It must play an important role in revamping of the university system.

Speaking as the Chief Guest Prof. M.L. Sisodia (founder Director, ASC) stressed on building modules of inter-disciplinary courses. He suggested that impact of Orientation Programmes must be investigated by establishing a rapport and follow-up communication with the teachers of affiliated colleges who had been oriented at ASC.

Dr. N.D. Mathur, Director, Academic Staff College, in his report, listed ASC's achievements during last ten years. He informed that so far 36 Orientation Programmes, 108 Refresher Programmes on various disciplines and 5 Orientation Programmes for Principals and Educational Administrators had been organised. He said that innovations had been tried in orientation programmes by organising in-built seminars on various topics, in-built modules on computer awareness, Gender Studies Yoga, Language, Research Methodology, Communication Skill, Women Studies, Gender and Society etc.

Reflection session was another innovative slot which helped as a feedback device. He also stressed that ASC had so far organised 21 one-day seminars on topics of Higher Education. Five national Seminars had been organised on Financing of Higher Education, Issues in Contemporary Writing, Higher Education in Rajasthan, Vocationalisation of Higher Education, and Review of Academic content of Orientation Courses. It also organised eight workshops in collaboration with NIEPA, NCERT, Banasthali Vidya Peeth, Katha, Poetry Society of India, Indian Association of Canadian Studies, Sahitya Academy etc. Two major UGC sponsored research projects were sanctioned to ASC on (1) Efficacy of Academic Staff Development Programmes of ASCs and to develop a follow-up programme on a continuous basis, and (2) Preparation of profile of higher education in Rajasthan. Prof. M.L. Sisodia is the Principal Investigator of these two Projects. Ford Foundtion has also sanctioned a major project on Campus Diversity Issues.

Dr. T.N. Mathur, Course Coordinator, highlighted the academic gains of attending an orientation programme. On the basis of his long experience of coordinating orientation programmes he found that they helped young teachers by sharpening their teaching skill and by learning in the inter-disciplinary environment which sometimes left a component of a rich experience.

Human Rights and International Law

The Association of Indian Universities, in collaboration with the International Committee of the Red Cross (ICRC), New Delhi, organised a Consultative Meeting of Experts in Law on 23rd and 24th May, 1998 at AIU House, New Delhi, to frame a curriculum for the course on Human Rights and International Law. The meeting was chaired by Prof. S.K. Agrawala, Former Secretary General, Association of Indian Universities. Those attended included Dr. N.R. Madhava Menon and senior faculty members from the universities, as also representatives of ICRC and United Nations High Commission for the Refugees. The model syllabus is being circulated to the universities and affiliated institutions teaching law, for further consideration. Copies can be had from Dr. Veena Bhalla, Student Information Service Division, Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110 002.

Earthquake Centre at IIT, Kanpur

The Indian Institutes of Technology (IITs) are reported to have decided to increase their student strength from the coming session, making available an additional 20 per cent seats at the undergraduate level and 90 seats at the post-graduate level. In all around 200 additional seats have been introduced. The IIT (Kanpur) has been selected for the setting up of Earthquake Monitoring Centre. This was jointly informed by Director of the IIT (Kanpur) Dr K.A. Padmanabhan and Chairman of the Board of Governors of the IIT Hari S. Bhartia in Kanpur recently.

It was informed that IIT, Kanpur had formulated a long-term plan for bringing about greater participation from industry in research activities.

Dr. Padmanabhan said a repayable financial assistance of Rs. 6 crore received from the ICICI under their Technology Institution Development Programme was the first step in this direction.

He said the institute was setting up Materials Testing Facilities, Augmentation of National Wind Tunnel Facility, Networking and Internet Services Centre, Technology Incubation and Development Centre and Advanced Centre for Software Education and Training.

On financial resources front, Dr Padmanabhan said the existing ratio was between 10 to 12 per cent in hard cash from the Government. The remaining fund was being generated by the Institute itself through its own resources.

He said the alumni of the IIT (Kanpur) had responded well and were contributing to the fund raising activity.

He said the pioneer batch was contributing for the construction of Continuing Education Centre by donating US $ 100,000 out of which US $ 33,000 had already been received.

He said the interaction with the industry was strengthened by getting into institutional collaborations with the CBRI, Roorkee, Cadence Desing India, LML, GSLV Project (Department of Space) and attracting industry sponsored fellowships from Indian and foreign companies.

Breakthroughs in Gene Sequencing

Ms. Sheela P. Singh and Ms. S. Daisy Mary Gold, research scholars at the Centre for Advanced Studies in Botany, University of Madras, have sequenced the genes associated with arsenic resistance and degradation of protocatechuate, respectively.

Ms. Sheela P. Singh, studied the mechanism of arsenic resistance in a bacterium *Pseudomonas fluorescens* isolated from the coastal waters of Bay of Bengal, Chennai. She constructed three clones using genetic engineering technology which detoxified high concentrations of arsenic. The nucleotide sequence of the sub-cloned arsenic resistance gene (2.6 kb) fragment was sequenced. Homology studies of the nucleotide and the protein sequence of pf arsenic with other *ars* genes in the database were carried out. The nucleotide sequence was submitted to GenBank, USA and assigned an accession number AF047036 and released to public database on March 31st, 1998.

Ms. S. Daisy Mary Gold isolated a bacterium *Bacillus subtilis* from the coastal waters of Bay of Bengal, Chennai. This bacterium cleaved protocatechuate — an intermediate of lignin, considered to be recalacitrant. By genetic engineering, Miss Daisy constructed clones that efficiently cleaved protocatechuic acid. The size of the genomic insert DNA was estimated at 2.7 kilobase. The nucleotide sequence of the 2.7 kb insert DNA was analyzed and its homology with other cloned genes was calculated. The sequence of the cloned gene has been assigned an accession number AF057519 by GenBank, USA and released to public database on April 7th, 1998. This is major finding, forming part of a Ph.D thesis.

Both the scholars worked under the guidance of Prof. A. Mahadevan, Director of CAS in Botany, University of Madras.

DAAD Fellowships

The German Academic Exchange Service (DAAD) has offered 29 fellowships for the academic year 1998/99 to Indian nationals, who are staff-members, researchers or teachers at universities, CSIR laboratories/institutes or other recognised institutes of university level, (i.e. the IITs, agricultural, veterinary and forestry institutes and other institutes of national importance). The subjects covered by these fellowships include Engineering & Technology, Agriculture & Veterinary Science, Natural Sciences & Humanities as well as German Language and Literature.

The first batch of 23 from all regions of India recently left for the Federal Republic of Germany after a pre-departure orientation session at the India International Centre, New Delhi.

These fellowships cover a 4-6 months German language course at a Goethe-Institute (Max Mueller Bhavan) in Germany followed by 1-2 years of research at a German university or research institute.

News from UGC

Countrywide Classroom Programme

Between 16th and 23rd June, 1998 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programmes are telecast on the Doordarshan's National Network from 7.15 to 8.00 a.m. every day except on Saturdays & Sundays. These programmes are also telecast on Doordarshan's National Network from 6.00 to 7.00 a.m. four days a week i.e. on Tuesdays, Thursdays, Saturdays and Sundays. On DD2 University Video Lecture Courses will be shown at midnight between 0000-0030 hrs. and in the morning between 10-10.30 a.m. on Monday through Friday.

Hindi Programmes are being telecast on Mondays, Wednesdays & Fridays from 6.00 to 6.30 a.m.

16.6.98
"Towards Better Health : Fly Control"
"Career in Museology"
UVLC
"Modernization"
"Functions of Several Variables-5"

17.6.98
"Musing Ayurveda"
"Giant Marvel"
"A Future in Physiotherapy"
UVLC
"Biogas : An Alternate Fuel"
"Cylindrical Projection-2"

18.6.98
"Question Time-66"
"Career Counselling : Performing Arts"
UVLC
"Integration and Re-organisation of States"
"Keynes vs The Classicals"

19.6.98
"Publishing House — Between the Author & the Reader"
"Vocational Education"
UVLC
"Theories of Emotions"
"Sampling Methods"

20.6.98
"On Poetry & Translation-3 : Literary Translation"
"Adventures in Misty Heights"
UVLC
No Telecast

21.6.98
"Artists Against Communalism-2"
"The Art of Papier-mache"
"Islamic Calligraphy Through the Ages-1"
UVLC
No Telecast

22.6.98
"Electromegnetism-2"
"Career Counselling : Fine Arts-Painting"
UVLC
"Trade and Commerce"
"Hormones-2"

23.6.98
"Sonic Litter"
"Career in Tellywood"
UVLC
"Industrialization"
"Functions of Several Variables-6"

Hindi Telecast

प्रात: 6.00 से 6.30 बजे तक

16.6.98
"महाबलीपुरम के वास्तुशिल्पीय आश्चर्य"
"वस्तु प्रकाश"

17.6.98
"निष्क्रिय स्थापत्य भवन-1"

18.6.98
"निष्क्रिय स्थापत्य भवन-2"
"काष्ठांकन"

19.6.98

"मस्जिद वास्तुशिल्प"

"एक वृक्ष — एक लता : सुनैरे की सम्पदा"

22.6.98

"जलियांवाला बाग : वीर सावरकर"

"फूटी कोठी : होल्कर महाराजाओं का अधूरा स्वप्न"

23.6.98

"गदरपार्टी : पं. रामप्रसाद बिस्मिल"

"क्षिप्रा : कल और आज"

Physically Handicapped Teachers

The University Grants Commission (UGC), while reiterating its earlier decision and rejecting separate reservation for physically handicapped persons in teaching positions, is reported to have approved the following suggestions: Making it mandatory to have a physically handicapped person on the Selection Panel if a physically handicapped was appearing for an interview for protecting their interests. This would ensure that the handicapped are not exposed to any bias or prejudice.

In view of the late entry of the handicapped persons in the field of employment, giving a relaxation in the prescribed age limit for appointments and also providing them with a better quality of writers during examinations — particularly for visually handicapped persons — so that they are not put at any disadvantage.

Further, more time be given to visually handicapped for examinations, including the examinations of the university as well as NET keeping in view their handicaps. Also the matter regarding relaxation in the percentage of marks at the master's level for appearing in the NET examinations could be considered by the commission.

Awards & Medals

Award for Prof. Chandrasekhar

Prof. S. Chandrasekhar of the Bangalore-based Centre for Liquid Crystal Research has been selected for this year's Neils Bohr-United Nations Economic, Social and Cultural Organisation (UNESCO) gold medal for his outstanding contributions to the development of liquid crystals and advancement of science in developing countries.

Prof. Chandrasekhar, along with three scientists from Russia and the United States, will receive the award from UNESCO Director General, Federico Mayor in Paris shortly.

G.D. Birla Awards

Professor R.N. Dandekar, National Research Professor of the Bhandarkar Oriental Research Institute in Pune, Pandurang Shastri Athavale, pioneer of the *Swadhyaya* (self-awareness) movement and Dr. Rajammal Devadas, whose name is synonymous with functional literacy and primary health care in Tamil Nadu, have been selected for the prestigious G.D. Birla awards for the year 1998.

Each award carries a cash prize of Rs. two lakh and a citation.

These awards have been instituted in the memory of Mr. G.D. Birla by the Birla Academy of Art and Culture. Mr. Birla, a close associate of Mahatma Gandhi, had made significant contributions in the struggle for independence in addition to rendering invaluable services in the sphere of industrial development, science, technology and education.

IAA Young Resercher Award

The Indian Accounting Association (IAA), as part of its efforts to promote excellence in Accounting Research, has instituted Young Researcher Award. It invites research proposals form its Life Members on research works done during the last five years in the area of Accounting by persons of not more than 35 years of age as on 31.12.1997 for the consideration of IAA Young Researcher Award. The proposals may be submitted to Prof. D. Prabhakara Rao, General Secretary, Indian Accounting Association, Andhra University Rd., 2-Shanmukha Apartments Visakhapatnam-530 017. The last date for receipt of proposals is 30th September, 1998.

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BOOK REVIEW

Excitement in Mathematics

R.N. Bhaumik*

J.N. Kapur. Mathematical Games for all. Mathematical Sciences Trust Society, Delhi, 1996, Pp. viii + 136, Rs. 80.00.

J.N. Kapur. Counting without Counting. Mathematical Sciences Trust Society, Delhi, 1997, Pp. 106, Rs. 80.00.

K. Kapur. Enjoyment, Excitement and Relevance of Mathematics, Mathematical Sciences Trust Society, New Delhi, 1996, Pp. viii + 144, Rs. 80.00.

J.N. Kapur is a missionary in the cause of popularising of mathematics, of making mathematics education an enjoyable and exciting experience, of creating an atmoshphere of understanding and awareness of mathematical ideas, of eradicating the sense of fear from the minds of students and of identifying a pool of talents among the students. He has written several books for these causes. The books under review, written in these directions, are also innovative, stimulating, inspiring and enjoyable.

Mathematical Games for All consist of games for all levels of students and require only the knowledge of elementary mathematics. There is a huge literature on recreational mathematics. The present book is however not on recreational mathematics but is meant for active enjoyment of mathematics by active participation in the process of mathematics. It consists of fourteen chapters and bibliographical notes. Chapter 1 deals with 'Why is mathematics fun?'. Chapter 2 contains some mathematical games which were first introduced in author's 'reflections of a Mathematician', 1973. Chapters 3-4 contain the reversed subtraction process due to Late D.R. Kaprekar. Chapter 5 describes the game of chaos and population games. Several successor number games are given in the chapter 7. Magic Square games and Dated Magic Squares are described in chapters 8 and 9. 18 games on numbers are given in the chapter 10. The students are usually told only to write the proofs of geometrical theorems. The students do not always feel the need for proving them. In the chapters 11 and 12, the author has illustrated some geometrical games related to geometrical theorems and figures which are beautiful and fascinating. Chapter 13 deals with curve stitching games. Many branches of mathematics had very humble beginnings. Topological games, described in chapter 14, show how the Graph Theory, an important branch of mathematics, came as a solution of a simple game.

Counting without Counting demonstrates that even with elementary mathematics, we can solve some combinatorial problems in minutes. It is addressed to senior secondary and undergraduate students and to all those familiar with school mathematics. This book consists of seven chapters and discusses problems which are of the following nature : How many solutions in positive and non-negative integers does the equation $x_1 + x_2 + x_3 + \ldots \ldots \ldots \ldots + x_k = n$ have? How many squares of all sizes are there on a chess board? How many partitions does a number n have? How many objects of a specific kind are there? How may interpretations of $a_1\ a_2\ a_3 \ldots \ldots \ldots a_n$ are possible when the product is non-associative and several similar questions are solved in this book.

Some of these problems are of mathematical olympiad-type problems because many of these require for their solutions only school mathematics but they require mathematical ingenuity of high order.

Enjoyment, Excitement and Relevance of Mathematics contains 75 mathematical items which are illustrated, with the help of problems for all categories of persons, in the form of small stories, incidents, jokes, quiz, puzzles, riddles, brain teasers etc. All these are exciting, enjoyable and reflect the lighter side of mathematics. Some of the items are poems (1,14,53,54,59), zero and infinity (18,19,60,61), G.P. (11), A.P.(8), golden ratio (28), indices (22,23), Binomial theorem (30), mathematical jokes (35,74), riddles (65,69), fallacies (72,73), Puzzles (6,40,41), magic square (38), short stories (3,8,56,75). Numbers in the brackets denote the serial numbers in the contents of the book. Some glimpses of history and development of the mathematics have been given in item numbers 29,35,36,64,65, and 68 Bright students will be that interested in the topics explained in items 3,11,15,28 and 50. One hopes after enjoying the lighter side of mathematics, students will be attracted to mathematics.

There are many printing errors in all the books. It is hoped that the publisher will take more care in making the future editions readable.

Dept. of Mathematics, Tripura University, Agartala-799 004, Tripura.

THESES OF THE MONTH

A list of doctoral theses accepted by Indian Universities

AGRICULTURAL & VETERINARY SCIENCES

Animal Biotechnology

1. Ramesh, Babu N G. **Characterization of fusion gene of newcastle disease viral isolates.** TANUVAS. (Dr K Nachimuthu) Department of Animal Biotechnology, Tamil Nadu Veterinary and Animal Sciences University, Chennai.

Plant Pathology

1 Jayaraj, J. **Studies on the biocontrol potential of Trichoderma harzianum Rifai.** Annamalai. (Prof R Ramabadran) Department of Plant Pathology, Annamalai University, Annamalai Nagar, Tamil Nadu.

2. Radhakrishnan, N V. **Studies on the root rot disease of mulberry (morus alba L.) caused by Botryodiplodia theobromae pat.** Annamalai. (Prof R Ramabadran) Department of Plant Pathology, Annamalai University, Annamalai Nagar, Tamil Nadu.

Pomology

1. Singh, Vishal. **Studies on standardization of maturity indices and physiological changes during growth, maturation and senescence of kiwi fruit (actindia deliciosa).** Y S Parmar. (Dr S K Chopra) Department of Pomology, Dr Yashwant Singh Parmar University of Horticulture & Forestry, Nauni.

Veterinary Pharmacology & Toxicology

1 Sultana, Mudasir. **Disposition kinetics and dosage regimen of tylcholinostorexz reactivators in organophosphato toxicity in male Cow calves.** Punjab Agril. Department of Veterinary Pharmacology & Toxicology, Punjab Agricultural University, Ludhiana.

Veterinary Science

1. Sriram, P. **An attempt to improve feed intake and growth by active immunization against somatostatin in rabbits.** TANUVAS. (Dr B Gowrisankar) Tamil Nadu Veterinary and Animal Sciences University, Chennai.

BIOLOGICAL SCIENCES

Biotechnology

1. Rajan, M K. **CDNA probe to detect the stage and site specific expression of fibroin in silkworm bombyx mori.** Anna. (Dr Arun Balakrishnan) Department of Bio-Technology, Anna University, Chennai.

2. Shanmugavelu, M. **Molecular studies on expression and mechanism of action of binary toxin of bacillus sphaericus 1593M by sitespecific gene manipulations.** Anna. (Dr Kunthala Jayaraman) Department of Bio-technology, Anna University, Channai.

3. Xavier, R. **Molecular approaches to identify potent indigenous isolates of bacillus thuringiensis.** Anna. (Prof Kunthala Jayaraman) Department of Bio-technology, Anna University, Chennai.

Botany

1. Bishnu, Prasad. **Effect of coal washery effluent on some weeds.** Vinoba (Dr P K Mishra) Department of Botany, Vinoba Bhave University, Hazaribag.

2. Dhyani, Shiv Kumar. **An analysis of effects of agroforestry system on crop yield and soil characteristics in Meghalaya.** NEHU. (Dr R S Tripathi) Department of Botany, North Eastern Hill University, Shillong.

3. Mallikarjun, Devarumath Rachayya. **Genome homology and differentiation in Eleusine coracana and its wild species.** Karnatak. (Dr S C Hiremath) Department of Botany, Karnatak University, Dharwad.

4 Shastry, M S R. **Morphological and biochemical studies on thermophilic fungi of Korba, Madhya Pradesh.** Ghasidas. (Dr R V Shukla) Department of Botany, Guru Ghasidas University, Bilaspur.

5 Tiwari, Pratiksha. **Effect of grazing on the primary production and mineral cycling of grasslands around Sal Research Centre, Bilaspur (M.P).** Ghasidas (Dr M F K Khokhar) Department of Botany, Guru Ghasidas University, Bilaspur.

Zoology

1 Mahalingeshwara, M S **Biology of the glassfish ambassis ranga (Hamilton).** Bangalore. (Dr S Ravichandra Reddy) Department of Zoology, Bangalore University, Bangalore

2. Srinivasulu. **Physiological and biochemical studies of scent glands of insects.** Kakatiya. (Prof C Janaiah) Department of Zoology, Kakatiya University, Warangal

ENGINEERING SCIENCES

Architecture and Planning

1. Sekar, S P **Development control as a source of planning information - A GIS model for Madras Metropolitan Development Authority.** Anna. (Dr A N Sachithanandan) Department of Architecture and Planning, Anna University, Chennai.

Chemical Engineering

1. Ramakrishnan, K. **Utilization of forest materials for the production of tannin and gallic acid : mass transfer and kinetic studies.** Anna. (Dr M R V Krishnan) Department of Chemical Engineering, Anna University, Chennai.

2 Sai, Raja Manickam. **Field-induced transport phenomena studies on solid-liquid systems under electric field.** Anna. (Dr V Mohan) Department of Chemical Engineering, Anna University, Chennai.

Civil Engineering

1. D, N Naresh. **Performance studies of reinforced soil structure during construction and under applied surcharge.** Kakatiya. (Prof N Babu Shankar) Department of Civil Engineering, Kakatiya University, Warangal.

2. Mohandoss, R. **Some organisational and operational aspects of irrigation in Tamilnadu.** Anna. (Dr N V Pundarikanthan) Department of Civil Engineering, Anna University, Chennai.

3. Ravi Kumar, V. **Optimization of irrigation systems through stochastic dynamic programming.** Anna. (Dr K Venugopal) Department of Civil Engineering, Anna University, Chennai.

4 Thanasekaran, K. **Design of water supply distribution pipe network using lagrangian multiplies techniques.** Anna. (Dr K Venugopal) Department of Civil Engineering, Anna University, Chennai.

Computer Science and Engineering

1. Annadurai, S. **Pattern classification techniques using hierarchical, multiple and fuzzy artificial neural networks.** Anna. (Dr A Balasubramaniam) Department of Electrical Engineering, Anna University, Chennai.

Electrical Engineering

1. Padhy, Narayana Prasad **Hybrid models for unit commitment problem.** Anna. (Dr S A Paranjothi) Department of Electrical Engineering, Anna University, Chennai.

Electronics and Communication Engineering

1. Sridevi, P Veera. **Some investigations on the generation of sum and S1s type difference patterns.** Andhra Department of Electronics and Communication Engineering, Andhra University, Waltair.

Leather Technology

1 Muralidharan, C **Studies in chrome tanning — A new approach for better management.** Anna. (Dr V S Sundara Rao) Department of Leather Technology, Anna University, Chennai

Mechanical Engineering

1 Bhagwat, Parag Laxman **Computer aided kinematic design.** Pune (Dr B M Domkundwar) Department of Mechanical Engineering, University of Pune, Pune

2 Manohar, Hansa Lysander **Status, analysis and technology management of the export knitwear industry in Tamil Nadu with special reference to Tirupur.** Anna (Dr V Subramaniam) Department of Mechanical Engineering, Anna University, Chennai.

3 Ramadoss, G. **Analytical and experimental investigation of fluidized bed waste heat recovery sytem.** Anna. (Dr A N Rao) Department of Mechanical Engineering, Anna University, Chennai

Production Engineering

1 Karunamoorthy, L. **Some studies on application of acoustic emission technique for evaluation of machining of metals composites and ceramics.** Anna. (Dr G S Kandasamy) Department of Production Engineering, Anna University, Chennai.

MATHEMATICAL SCIENCES

Mathematics

1. Mishra, Bimal Kumar. **A study of some mathematical modellings in plant pathology.** Vinoba (Dr G P Sharan) Department of Mathematics, Vinoba Bhave University, Hazaribag.

2. Nandy, Krishna Chandra. **Study of the viscous flow over a porous boundary.** North Bengal. Department of Mathematics, University of North Bengal, Darjeeling, West Bengal.

3. Padmaja, Shashi. **A study on queueing systems with server vacations and tandem queues.** Anna (Dr K M Mehta) Department of Mathematics, Anna University, Chennai.

Statistics

1 Husain, Syed Ejaz Rizvi. **Optimum stratification for two study variables using auxiliary information.** Punjab Agril. Department of Mathematics, Punjab Agricultural University, Ludhiana

MEDICAL SCIENCES

Kaya Chikitsa

1. Powar, Prabhakar Shivram. **Single drug therapy of ayurveda i.e. Vang Bhasma in dysenteries.** Pune. (Dr A R Shitre) Department of Ayurveda, University of Pune, Pune.

Pharmacy

1. Rathod, Sudha. **Drug delivery system using erythrocytes and other biodegradable drug centres.** SNDT. (Dr S G Deshpande) Department of Pharmacy, SNDT Women's University, Mumbai

PHYSICAL SCIENCES

Chemistry

1 Aher Jayraj Sadashiv. **Transport and thermodynamic properties of multicharged electrolyte solutions in aqueous N N - diaethyl formamide at different temperatures.** Pune. (Dr P S Nikas) Department of Chemistry, University of Pune, Pune.

2. Annadurai, G. **Colour removal from aqueous environ by waste derived biopolymers.** Anna (Dr M R V Krishnan) Department of Chemistry, Anna University, Chennai.

3 Balasubramanian, V V **Synthesis and physicochemical characterization of ion exchanged zeolites Y & BEA, and investigation of their catalytic performance in the alkylation of phenol.** Anna. (Dr M Palanichamy) Department of Chemistry, Anna University, Chennai.

4 Chheda, Abhaykumar Hirachand. **Synthesis of some biologically active compounds - HIV inhibitors.** Pune. (Dr A V Ramarao) Department of Chemistry, University of Pune, Pune.

5. K G Rajeev **Modulation of DNA triplex stability through chemical modifications.** Pune (Dr K N Ganesh) Department of Chemistry, University of Pune, Pune

6 Murugavel, S C **Studies on photocrosslinkable-cum-flame retardant poly (benzylidene phosphoramide esters).** Anna. (Dr P Kannan) Department of Chemistry, Anna University, Chennai

7 Nandanan, Erathodiyil **Asymmetric hydroxylations of olefins, reductions of ketones and C-H activation of hydrocarbons by transition metal catalysis.** Pune. (Dr T Ravindranathan) Department of Chemistry, University of Pune, Pune.

8 Sen, Tapas. **Synthesis, characterization and catalytic properties of some vanadosilicate molecular sieves.** Pune. (Dr S Sivasanker) Department of Chemistry, University of Pune, Pune.

9. Shanishohara, Ashok Pratapral. **Synthesis and antimicrobial study of medicinally important compounds.** Bhavnagar. (Dr N K Undavia) Department of Chemistry, Bhavnagar University, Bhavnagar.

10. Sistra, V S Lalitha. **Synthesis of biologically active compounds : Studies in nucleoside and related chemistry.** Pune. (Dr A Rama Rao) Department of Chemistry, University of Pune, Pune.

11. Sur, Surojit. **Stereoselective transfermations or arene tricarbonylchromium complexes.** Pune. (Dr Amitabha Sarkar) Department of Chemistry, University of Pune, Pune.

12. Surianarayanan, M. **Thermokinetic aspects of aqueous polymerization of acrylonitrile.** Anna. (Dr K V Raghavan) Department of Chemistry, Anna University, Chennai.

13. Umapathy, N S. **Studies on subtilisin and amylase inhibitors of finger-millet (Eleusine coracana gaertn).** Bangalore. (Dr P S Veerabhadrappa and Dr T K Virupaksha) Department of Chemistry, Bangalore University, Bangalore.

14. Vasanthy, B Kumari. **Synthesis, physicochemical characterisation and catalytic activities of basic zeolites for side chain alkylation of toluene.** Anna (Dr V Krishnaswamy) Department of Chemistry, Anna University Chennai

15 Venkatraman, M S. **Synthetic studies towards comptothecin and other heterocyclic compounds.** Pune. (Dr S P Chavan) Department of Chemistry, University of Pune, Pune.

16 Yuvaraj, S. **Synthesis, modification and characterisation of Y and BEA zeolites, and investigation of their catalytic performance in N-alkylation and redox reactions.** Anna. (Dr M Palanichamy) Department of Chemistry, Anna University, Chennai

Physics

1. Arulkumaran, S. **Studies on the electrical and structural characteristics of lec and VCZ grown GaAs single crystals.** Anna. (Dr J Kumar) Department of Physics, Anna University, Chennai.

2. Banerjee, Dipankar. **Magnetohydrodynamic phenomena in the solar atomosphere.** Bangalore. (Prof S S Hasan) Department of Physics, Bangalore University, Bangalore.

3 Dkhar, Paul Sansan. **Spectroscopic study of the trace elements on rice (oryza sativa. linn) in Meghalaya.** NEHU (Dr P Nongkynrih) Department of Bio-physics, North Eastern Hill University, Shillong.

4. Fareed, R S Qhalid **Investigations on the growth kinetics of some binary and ternary III-V compound semiconductors by liquid phase electroepitaxy.** Anna. (Dr C Subramanian) Department of Physics, Anna University, Chennai.

5. G Usha. **Some studies on molecular forces influencing dimensional stability of rat tail tendon (RTT) collagen fibre.** Anna. (Dr T Ramasami) Department of Physics, Anna University, Chennai.

6. Goplakrishnan, N. **Investigations on the nucleation and growth kinetics of vapour phase epitaxy of III-V binary ternary and quaternary compound semiconductors.** Anna (Dr C Subramanian) Department of Physics, Anna University, Chennai.

7. Kale, Karbhari Vishwanath. **Studies on pure and composite fast ion conducting systems.** Marathwada. (Dr G K Bichile) Department of Physics, Dr Babasaheb Ambedkar Marathwada University, Aurangabad

8. L, Sriramkumar. **Quantum fields in non-trivial backgrounds.** Pune. (Dr T Padmanabhan) Department of Physics, University of Pune, Pune.

9. Pari, G. **Density functional description of the electronic structure of some correlated systems.** Anna. (Dr R Asokamani) Department of Physics, Anna University, Chennai.

10 Ravichandran, S. **Studies on the development of therapeutic model based system for modulated mid-frequency electrokinesy based on certain qualitative reasoning techniques.** Anna. (Dr G N Sivaramaprasad) Department of Physics, Anna University, Chennai.

11. Santhanakrishnan, T. **New optical configuration in speckle metrology for deformation measurements and contouring.** Anna. Department of Physics, Anna University, Chennai.

12. Sekar, C. **Synthesis, crystal growth and characterization of fullerenes and some studies on carbon nanotubes.** Anna. (Dr C Subramanian) Department of Physics, Anna University, Chennai.

13. Sengupta, Sujankumar. **Transfer of polarized radiation in astrophysical problems.** Bangalore (Dr Peraiah) Department of Physics, Bangalore University, Bangalore.

14. Settu, T. **Studies on preparation and characterization of tetragonal zirconia polycrystals by SOL-GEL method.** Anna. (Dr P Manohar) Department of Physics, Anna University, Chennai.

15. Thamizhavel, A. **Studies on the growth and characterization of YBCO, BSCCO single crystals and fullerenes.** Anna. (Dr C Subramanian) Department of Physics, Anna University, Chennai.

16. Thilakan, P. **Investigations on the deposition conditions of indium oxide, indium tutin oxide thin films and ito/inp solar cell structure.** Anna. (Dr J Kumar) Department of Physics, Anna University, Chennai

17 Thiyagrajan, N. **Processing and characterization of reaction formed sic -based ceramic matrix composites.** Anna. (Dr P Manohar) Department of Physics, Anna University, Chennai

NETAJI SUBHAS INSTITUTE OF TECHNOLOGY

(FORMERLY DELHI INSTITUTE OF TECHNOLOGY)

OLD I.G. BLOCK : KASHMERE GATE

DELHI-110 006

CORRIGENDUM

RE : RECRUITMENT TO FACULTY POSITIONS

Reference advertisement inviting applications for faculty positions at this Institute published in the Newspapers on different dates from 17th to 20th May, 1998. For complete details "Employment News" dated 30th May, 1998 may be seen instead of 23rd May, 1998.

The last date for receipt of applications remains unchanged as **25th June, 1998.**

DIRECTOR

UNIVERSITY GRANTS COMMISSION
(S & A BUREAU)
SOUTH CAMPUS, DELHI UNIVERSITY
BENITO JUAREZ MARG
NEW DELHI-110 021

F.No. 19-1/88(SA II)

The Univesity Grants Commission invites applications for the award of Research Fellowships in Engineering & Technology for the year 1998-99 from the persons who have got a Master's Degree in Engineering/Technology/Pharmacy with atleast 55% marks from a recognised university. 22.5% of fellowships are reserved for SC/ST candidates.

The objective of this award is to provide an opportunity to research scholars to undertake advanced study and research in Engineering & Technology, Pharmacy and Agricultural Engineering leading to Ph.D Subjects like Geology and Geo-physics are not considered under Engineering & Technology.

The candidates should not be more than 40 years of age as on 1.7.98, relaxable by five years for women and SC/ST candidates. The total duration of the fellowship is 4 years, extendable by another year in exceptional cases.

The value of Research Fellowships shall be Rs. 2,500/- p.m. (unrevised) for the first two years and Rs. 2,800/- p.m. (unrevised) for the subsequent years with an annual contingency grant of Rs. 7,500/-.

The applications in the prescribed form given below, may be sent to the Deputy Secretary (SA), University Grants Commission, UGC Block, South Campus, University of Delhi, Benito Juarez Marg, New Delhi-110 021, through the University/Institution where the fellow desire to undertake research work, **within one month** from the date of publication of advertisement.

The selections will be made on the basis of merit and on the recommendations of the Committee constituted by the Commission. The decision of the Commission shall be final.

Application form for Research Fellowship in Engineering & Technology

The form must be filled carefully Incomplete form is liable to be rejected.

1 Name (in Block letters with surname underlined)
State Dr./Shri/Smt./Kumari ....

2 Date of Birth .

3 Nationality :

4 Father/Husband's name (Strike of one not relevant) :

....

5. (a) Present Address :
(b) Permanent Address :

6. If belonging to Scheduled Caste/Tribes. State name of the Caste/Tribe .

7. Particulars of Educational qualifications, starting with Matriculation onward.
(Please attach attested copies of mark sheets certificates, diploma etc. and give a reference in the last column) :

Examination passed and year of passing	School/ College University	Subject offered	Division/ Grade	Percentage of marks/ cumulative grade point	Encl. No.

8. Particulars of GATE/Joint UGC-CSIR JRF Examination passed.

Name of the Examination	Year	Roll No.

(Certificate to be enclosed)

9. Name of the Department, College/University where you propose to do research
   (a) Department :
   (b) College/University :
   (&) (Certificate from the Head of the Department/Institution to the effect that necessary facilities will be provided should be attached).
   (c) Are you intending to register for a Doctoral Degree?
10. Give particulars of the Research Problem :
   (a) Subject :
   (b) Specialisation within the subject :
   (c) Title of Research Problem :
   (in block letters)
   (d) Name and designation of the Supervisor with whom the research is proposed to be undertaken.

   (A brief abstract not exceeding 500 words on the proposed research work, methods of approach etc. must be sent along with the application, without which the application will be treated as incomplete).
11. Please State :
   (a) Whether you are already registered or propose to register for research work leading to award of a doctorate degree
   (b) Date of Registration :
   (c) Name of the University :
   (d) Topic of Research :
   (e) The period for which you carried on work on the Research Project approved.
   (f) Name & designation of the Supervisor
   (g) Details of papers published (if any) with a copy of the reprints Details of publications may be given on a separate sheet of owner.
12. If already drawn a scholarship or a fellowship, give particulars below :

Source of Scholarship/ Fellowship	Value & date of commencement	Date upto which tenable	Whether the work has been completed is in progress

13. Any other information relevant to the research work, which you may like to give in support of your application :
14. List of enclosures :
   1.
   2.
   3.
   4.

Declaration

I hereby declare :

that I have read the rules regarding the award of Research Fellowship of the University Grants Commission and in the event of a Fellowship being awarded, I undertake to engage myself whole time for work on the subject under the direction of the supervisor during the tenure of fellowship. I further declare that to the best of my knowledge and belief, the particulars given in the form are correct.

Place :

Date : (Signature of the Candidate)

For use by University/College

It is certified that necessary facilities will be provided for the research work of : ....
recommendation of the forwarding authority : (Views of Supervisor/Head of the Department regarding the candidate's suitability for the award should be obtained separately and enclosed with the application).

Signature

Place : Registrar/Principal

Date : University/College

BASIC DATA SHEET

(To be filled by the candidate in capital letters. One letter should be filled in each box. One box should be left blank between two words)

1. Fellowship No. ☐
   (to be filled in the Office)
2. Name ☐
3. Address for Correspondence ☐
4. Education Qualifications :

	Exam. Passed	Subjects	% of marks
B. Pharm./ B.E./ B. Tech.	Graduation		
M. Pharm./ M.E./ M Tech.	Post Graduation		

5. Particulars of GATE/Joint UGC-CSIR JRF Examination passed.

Exam Passed	Year	Roll No.	% if any

6. Title of Research Project : ☐
7. Name of the Department, College/University where you propose to do research ☐
8. Whether obtained any other fellowship/Scholarship (Yes/No)
   (Enter 'Y' or 'N') ☐
9. Category (Write '1' for SC, '2' for ST '3' for PH '4' for general) ☐

—davp 823(3)98

MOTHER TERESA WOMEN'S UNIVERSITY

KODAIKANAL-624 102

Notification No. 96

Applications for admission to the following REGULAR Courses are invited from WOMEN CANDIDATES possessing the required qualification specified for each course commencing from this Academic Year 1998-'99.

The courses offered at Kodaikanal, Chennai and Madurai are indicated by the letters K, C, and M against the courses.

I. M. PHIL (2 Semesters)

1. Environmental Economics 2. English 3. Family Ecology and Consumer Studies (Specialisation: (a) Human Development (b) Family Resource Management (c) Extension Education (d) Textiles and Clothing (4) Historical Studies (5) Sociology (6) Tamil (7) Population Studies (8) Education (9) Women's Studies (10) Guidance & Counselling. (All these courses will be offered at Kodaikanal). 11. Computer Science — (C).

ELIGIBILITY

1 to 6,9,11 : Post Graduate Degree with not less than 55% in the concerned subject/specialisation

7 : Any Post Graduate Degree with not less than 55%

8 : Any Post Graduate degree and M.Ed with not less than 55%

10 : M.A. Guidance & Counselling or M.A. Psychology with 55%

II. POST GRADUATE COURSES : M.A./M.Sc (4 SEMESTERS)

1. International and Business Economics — C. 2. Guidance & Counselling — M. 3. English — K. 4. Human Development — C. 5. Family Resource Management — C. 6. Extension Education — C. 7. Textiles & Clothing — C. 8. Tourism & Travel Management — M. 9. Rural Sociology — K. 10. Sociology — K. 11. Tamil Studies — C & M 12. Mass Communication — C. 13. Women's Studies K, C & M. 14. Master of Bank and Financial Management — M. 15 Master of Total Quality Management — M. 16. Master of Corporate Secretaryship — M. 17. Master of Music — M.

ELIGIBILITY

1. Bachelor's Degree in Economics with 50% or any other Bachelor's Degree with Economics as one of the subjects

2. 8 to 10, 12 to 17 — Any Bachelor's Degree with 50%

3. Bachelor's Degree with 50% in Part III

4 to 7 — Bachelor's Degree in Home Science with 50%

11. Bachelor's Degree in Tamil with 50% or any Bachelor's Degree with 50% in Part — I Tamil

III. POST GRADUATE DIPLOMA COURSES IN

1. Computer Applications — M (one year) 2. Personnel Management and Industrial Relations — M (two years) 3. Entrepreneurial Development — M. (one year) 4. Herbal Medicine — M (one year).

ELIGIBILITY

1. Any degree with Mathematics as Major or ancillary OR B.Com 2. Any graduate with 50% — Preference to employed/sponsored candidates 3. Any Graduate with 50% 4. B.Sc. Science subject with 50%.

IV. UNDER GRADUATE COURSES : 6 (SEMESTERS)

1. Bank Management — K. 2. Business Administration — K. 3. Computer Applications — K. 4. Corporate Secretaryship — K. 5. Tourism and Travel Management — M. 6. Applied Electronics — K. 7. Textiles and Clothing — K. 8. Family Resource Management — K. 9. Extension Education — K. 10. Human Development — K. 11. Medical Laboratory Technology — M. 12. Medical Micro Biology — M. 13. Medical Bio Chemistry — M. 14. Bachelor of Music — M.

ELIGIBILITY

1,2,4,5,14 :	+ 2 Pass
3	+ 2 Pass with Mathematics/Computer Science as one of the subjects.
6	+ 2 Pass with Physics & Mathematics combination
7 to 10	+ 2 Pass with Science subjects/Vocational stream with Home Science Subjects
11 to 13	+ 2 Pass with Science Subjects

V. DIPLOMA COURSES

1. Ophthalmic Assistance — M. (2 years) 2. House Keeping and Institutional Management — M. (2 years) 3. Executive Secretary — M (6 months) 4. Sales & Marketing — M (6 months) 5. Human Resource Development — M (6 months) 6. Export Management — M (6 months).

Eligibility : X Pass

VI. CERTIFICATE COURSES :

1. D base — M (3 months) 2 Small Industry Management Development — M (6 months) 3. Desk Top Publishing — M (3 months) 4. Oracle and Developer 2000 — M (6 months) 5. Power Builder — M (2 months) 6. Visual Basic — M (2 months) 7. VC++ — M (Part time 3 months) (Full time — 1 month).

Eligibility : 1 + 2 passed, 2 to 7 Any Graduate

VI. PH.D. COURSES BOTH REGULAR/PART-TIME ARE AVAILABLE FOR ALL COURSES OFFERED UNDER M.PHIL REGULAR. PH.D. REGISTRATION IS DONE THROUGHOUT THE YEAR.

COST OF APPLICATION : (in Rs.)

Ph.D. — 200-00, M.Phil — 150-00, M.A — 100-00, Diploma Courses — 75-00, U G Courses 60-00 & Certificate Course — 50 00

For all above mentioned courses application forms and information can be had from the following addresses :

Registrar,
Mother Teresa Women's University,
Kodaikanal-624 102

Co-ordinator
Mother Teresa Women's University
Research & Extension Centre,
Institute of Advanced
Study in Edn. Campus,
Saidapet, Chennai-600 015

11/8, II Street,
Anjal Nagar,
Madurai-625 018

by sending a STATE BANK OF INDIA DEMAND DRAFT for the prescribed cost drawn in favour of Registrar, Mother Teresa Women's University, Kodaikanal with Two Self Addressed Stamped Envelopes affixing stamp worth for Rs. 8 and Rupees 2/-

FOR EACH COURSE, A SEPARATE APPLICATION FORM IS TO BE OBTAINED. The University will not be responsible for the POSTAL DELAY Candidates are therefore asked to apply well in time. Even if publication of results are delayed, the application must reach the University ON OR BEFORE 3-6-'98 and the results no sooner published must be communicated mentioning application number.

The University will not hold itself responsible to communicate if the scholar does not fulfil the required eligibility.

The University Reserves the right to suspend any course if sufficient number of candidates are not available.

Fees must be paid in full when admitted failing which seat will not be kept pending payment.

All fees except deposits are NON-REFUNDABLE

Hostel facilities are available at Kodaikanal; with reference to two centres Chennai and Madurai provision will depend upon number of students seeking admission.

The filled-in application form along with the registration fee should be addressed to the Registrar, Mother Teresa Women's University, Kodaikanal and reach on or before Tuesdy 30th June, 1998.

Dr. A. Suryakumari
REGISTRAR-IN-CHARGE

KODAIKANAL CHRISTIAN COLLEGE

Prakasapuram, Kodaikanal-624 104

IF YOU WISH TO

- JOIN AN UNDERGRADUATE OR P.G. PROGRAMME THAT GIVES YOU A DEGREE PLUS MANY CERTIFICATES/DIPLOMAS,
- ACQUIRE AN EDUCATION THAT MAKES YOU SELF CONFIDENT, AND
- BENEFIT FROM PROFESSIONAL PLACEMENT SERVICES.

APPLY IMMEDIATELY FOR ADMISSION TO
KODAIKANAL CHRISTIAN COLLEGE,
PRAKASAPURAM, KODAIKANAL-624 104.

THE ACADEMIC PROGRAMME INCLUDES :

A. EXPERT PREPARATION FOR COURSES AFFILIATED TO MADURAI KAMARAJ UNIVERSITY :

B.Sc. COMPUTER SCIENCE
B.Sc. ELECTRONICS
B.Sc. HOTEL MANAGEMENT AND CATERING SCIENCES
B.B.A.
B.COM and
M.A. (M.C.M.) MEDIA COMMUNICATION AND MANAGEMENT

B. ADDITIONAL REQUIRED ENRICHMENT DIPLOMAS AND CERTIFICATES (OFFERED WITHIN THE REGULAR SCHEDULE) :

SPOKEN ENGLISH AND PUBLIC SPEAKING
COMPUTER AWARENESS
FUNDAMENTAL MATHS
VALUE EDUCATION
HISTORY OF IDEAS

C. ADDITIONAL VOCATIONAL COURSES (two required for each major) :

TRAVEL AND TOURISM
SERVICE MARKETING
COMPUTER HARDWARE
HUMAN RESOURCE DEVELOPMENT
ADVANCED COMPUTER APPLICATIONS
TOTAL QUALITY MANAGEMENT
MARKETING
PERSONNEL MANAGEMENT
JOURNALISM
FRENCH

CONTACT : **REV. DR. FRANCIS SOUNDARARAJ**
PRINCIPAL, KODAIKANAL CHRISTIAN COLLEGE
PRAKASAPURAM, KODAIKANAL-624 104
Telephone : Office 42216 Res. 41236
Fax : 04542-41024

HURRY UP BEFORE SEATS ARE FILLED UP

CLASSIFIED ADVERTISEMENTS

XAVERIAN EDUCATIONAL SOCIETY'S

FR. AGNEL COLLEGE OF ARTS AND COMMERCE, PILAR-GOA

Applications are invited for the following posts

1 Lecturer in Political Science — 1 Post, Full-time

2 Lecturer in Konkani — 2 Posts, Full-time one (Maternity Leave Vacancy) & 1 Lecture-basis

3 Lecturer in Hindi — 1 Post, Lecture-basis

4 Lecturer in History 1 Post, Lecture-basis

5 Lecturer in Computer Awareness — 1 Post, Part-time (Maternity Leave Vacancy)

6 Lecturer in Mathematics — 1 Post, Part-time (Maternity Leave Vacancy)

7 Lecturer in Business Law — 1 Post, Lecture-basis

8 Peon — 1 Post, Full-time

Academic Qualification :

i) For post under Sr Nos 1,2,3,4, Master's Degree in the relevant subject (i e) minimum 6 papers with atleast 55% marks or its equivalent grade and good academic record (i e at least 50% at the graduation examination with applied for, or an average of 50% marks at the three Examinations i e SSC, HSSC and graduation taken together)

ii) For post under Sr No 5 & 6

a) M E/M Tech in Computer Science or Electronics with 55% marks and good academic record

OR

b) M C A or M Sc in Computer Science or Electronics with 55% marks and good academic record

OR

(c) M Sc (Statistics or Mathematics) with 55% marks and good academic record with exposure to computer science

iii) For post under Sr No 7 L L M with 55% marks or L L B with 50% marks and 5 years experience as practising lawyer

iv) For the post of Peon the candidate should be std VIII passed

Candidates of all the above posts should have cleared the ELIGIBILITY TEST for Lecturers conducted by U G C , C S I R or similar tests accredited by U G C If candidates having passed the said Eligibility Test are not available, candidates fulfilling other conditions would he appointed on purely temporary basis Scales of Pay Rs. 2200-75-2800-100-4000

Persons who are already employed shall send their applications through proper channel Break in service, if any, should be accounted for

For the Part-time posts, the scales of pay will be the half of that of the full-time posts, mentioned above

For the lecture-basis posts, payment is at the rate of Rs 75/- per lecture

Interested candidates should apply giving full details of academic qualifications from SSCE onwards, clearly indicating the subjects

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Institution of Permanent Way Engineers (India)

G-11, Railway Board, Rail Bhawan, Raisina Road, New Delhi-110 001
Tel : Railway : 84-3272, MTNL : 3387915

ADMISSION NOTICE

Diploma Course in Railway Engineering For 1998-99

The Institution of Permanent Way Engineers (India), a Technical body under the Ministry of Railways, invites application from Diploma Holders in Engineering or Graduates with Science or Maths as one of the subjects in intermediate/Plus 2 of S.S C . for one year Correspondence Course of Diploma in Railway Engineering for the academic year 1998-99 The Diploma is accepted by the Ministry of Railways as a desirable additional qualification for recruitment to various posts through Railway Recruitment Boards in almost all disciplines of Railways.

Diploma Course will also be very useful to serving railway employees as well as employees working in public/private sector connected with railways such as railway sidings, port trust, cement industry, fertilizers, firms engaged in construction of railway works as well as manufacturers of track components and allied railway products

The application form alongwith other details can be obtained from the office of IPWE (India), address given above by presenting/sending a Bank Draft of Rs 50/- in favour of IPWE (India) payable at New Delhi alongwith a self addressed duly stamped (Rs 4/-) envelope sized 25x15 Cms Payment is not acceptable by any other mode

The last date for receipt of Application is 30th June, 1998.

S.M. Singla
HONY. GENERAL SECRETARY, IPWE

Overseas Post-Doctoral Research Fellowship in Environmental Economics

Applications are invited from suitable candidates for being considered for the award of overseas post-doctoral **research fellowship in environmental economics** (maximum duration of 10 months). These fellowships are **tenable at prominent foreign universities or environmental economics/economics research institutions** and are intended to strengthen research and teaching capabilities in India in environmental economics and provide opportunities for Indian scholars to improve their skills in this area through course work.

Indian citizens holding permanent positions in Indian universities, colleges or research institutions **with a Ph.D in economics and below 40 years of age as on the last date prescribed for receipt of completed applications,** are eligible for these research fellowships Preference will be given to candidates who are teaching in an university or a college and have taken courses in environmental economics at the post-graduate level/have done teaching or research in that area.

During the tenure of the fellowship, the selected candidates will be expected to take courses in environmental economics and do research on a specific topic Proposals of both empirical and theoretical research in environmental economics will be considered The fellowships will be administered by the Environmental Economics Overseas Fellowship Committee (EEOFC) constituted under the World Bank aided India Capacity Building project - Environmental Economics Component. For an application form, please write to the Member Secretary, EEOFC at the address given below stating date of birth, present position and date of Ph D award

***Last Dates**

*For requesting for application forms	July 10, 1998
*For receipt of completed applications by Member Secretary, EEOFC	August 10,1998

National Institute of Public Finance and Policy, 18/2, Satsang Vihar Marg, Special Institutional Area, Near JNU, New Delhi 110067

offered, marks secured and class/division obtained at all Public examinations, teaching experience, address, date of birth, etc

True copies of marks statements and certificates of all Public examinations passed should be enclosed.

Applications duly completed should reach the Principal within 15 days from the date of advertisement.

Dr. B. Dias
PRINCIPAL

TEZPUR UNIVERSITY

(A Central University established by an Act of Parliament)

Post Box-72, Tezpur-784 001

Advt. No. F. 13-1/97 ***Dated 27.5.98***

Applications are invited from eligible Indian citizens for filling up the following posts

A TEACHING POSTS :

Department	*Posts*	*Nos of Post*	*Reservation*
1 Chemical Sciences	Lecturer	1	SC
2 Electronics	Reader	1	
	Lecturer	2	SC-1
3 Information Technology	Lecturer	1	
4. Physics	Reader	1	
	Lecturer	3	ST/SC/ OBC-1
5 Business Administration	Reader	2	
	Lecturer	2	
6 M B B T	Lecturer	1	

B NON-TEACHING POST :

1 Computer Engineer 1

Qualification First class B E./B Tech in computer science

2 Laboratory Supervisor M B B T 1

Qualification M Sc in Biotechnology/Botany/ Chemistry/Zoology

3 Asst Curator, Cultural, Museum-cum-Archive 1

Qualification Master's degree in Cultural Anthropology, Folklore or Allied Discipline with specialization in the field of Museum and Archive

In case of teaching post UGC/AICTE/(in case of posts at Sl 5) norms will be applicable

Prescribed application forms and other particulars (specialisation, essential qualification, pay scales, application fee etc) about the posts may be obtained free of cost from the office of the undersigned either in person or on written request accompanied by a self addressed stamped (Rs 3) envelope

Application forms will be issued upto 30.06.98.

Candidate called for interview will be paid II class train fare on the shortest route/Bus fare on production of ticket/receipt.

Last date of receiving completed application is 16 July, 1998.

Dr. M.R. Sharma
REGISTRAR

DAYALBAGH EDUCATIONAL INSTITUTE

(Deemed University), Dayalbagh, AGRA-282005

Applications in the prescribed form are invited for the following posts. The preferred areas of Lecturers are indicated in *italics* :

RESERVED FOR SC : (A) Lecturers—Commerce (*Accountancy & Law-Accounting Applications*) (1), Hindi (1), Home Science (1), Sociology—*Social Welfare Institutions & Activities* (1), *English (1), *Mech. Engg (1) **(B)** Technician Gr-III Botany (1), Teaching Asstt. (Mech Engg) (1)

RESERVED FOR ST : (A) Lecturers—Drawing & Painting—(*Commercial Art including Textile Designing & Printing*) (1), Education (Pol. Sc) (1) Economics (1) Psychology (*Diagnosis and Psychological Treatment of Behavioural Problems*) (1) **(B)** Carpenter (1)

RESERVED FOR OBC . (A) Asstt Univ Librarian (1) **(B)** @Instructor—Drawing & Painting (1), Technician Grade-I Metallurgical/Metallographical Instrumental Analyses (1) Technician Grade-I Physics (1), —*Draftsman (1)

UN-RESERVED . (A) @Professor—Elect Engg (1), *Senior Lecturer (Elect. Engg) (1), Lecturers—Business Management (3), Commerce (3) [one each in Accountancy & Law, Applied Business Economics (*Financial Applications*), Applied Business Economics Chemistry (*Pollution control of Air and Water and knowledge of leather processing*) (1) Computer Sc & App (2), Economics (*Business Economics*) (1), Education—*School Craft/Kitchen & Ornamental Gardening* (1), Education (History/Philosophy) (1) English (1 + @1), Elect. Engg (1), Home Science (1), Mathematics—*Industrial Mathematics* (1), Mech Engg (1), @Music (Vocal) (1) Music (Tabla) (1), Physics (1), Sociology (1), Zoology (*Cell Biotechnology*) (1), Asstt Univ Librarian (1), Asstt. Supdt of Works (1), Lecturer in English (1) (for DEI P V Girls Intermediate College—only female candidates are eligible) **(B)** *Instructor (Wiring & Jointing) (1), Instructor (Mech Engg) (1), Office Supdt (Establishment) (1), *Senior Clerk (1), @Routine Clerk (1).

@ *At present temporary posts likely to become permanent*

* Posts for the DEI Technical College For these posts and other posts in Engineering areas only male candidates are eligible

Note (1) Prescribed application forms and particulars of pay scales, qualifications, preferred specialisations, experience etc can be had from the office of the REGISTRAR of the Institute on payment of Rs 30/- for posts mentioned at Sl No (A) above and Rs 20/- for those at Sl No (B) above at the Institute counter or by post by sending a self addressed and stamped envelope of size 22 x 10 cms. with postal stamps of Rs 4/- for ordinary post or Rs 16/- for Registered post (2) Application complete in all respects alongwith enclosures and registration fee of Rs 50/- for posts mentioned at Sl No (A) above and Rs. 20/- for those at Sl No (B) above must reach the Registrar within ONE MONTH from the appearance of this notification (3) Applicants belonging to the Reserve categories (SC/ST/OBC) are required to pay only 50% of the charges for the application form and the registration fee (4) All payments must be made either in Cash at Counter or by bank draft in favour of **DAYALBAGH EDUCATIONAL INSTITUTE** payable at Agra (5) Besides fulfilling the prescribed qualifications for the posts of Lecturers (other than Engineering and the posts of Lecturer in English of DEI Technical College and DEI Prem Vidyalaya Girls Intermediate College) candidates should have cleared the Eligibility Test for Lecturers conducted by the UGC/CSIR or similar test accredited by the UGC (except for those who have submitted their Ph D thesis by 31st December 1993) (6) Posts reserved for S T candidates may be filled up by S C candidates if suitable S T candidates are not available and vice-versa (7) Candidates are called for interview on the recommendations of the Screening Committee of the Institute and as such all applicants may not be called for interview (8) The Institute reserves the right to fill or not to fill any of the posts, without giving any reason, whatsoever The number of posts may vary depending on exigencies

4th June, 1998 **REGISTRAR**

CONCEPT

INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY

Powai, Mumbai 400 076.

Advertisement No.L-39/98-99

The Computer Aided Design Centre (CAD) invites applications for two posts of Principal Research Engineer/Senior Research Engineer/Research Engineer in salary scales Rs 4500-6300/ 3700-5700/3000-5000 (all pre-revised) and with allowances as per Central Govt rules Candidates should have at least a Master's degree in Chemical Engineering with a very good academic record and experience in the development and use of CAD tools Placement in the positions indicated above will depend on the qualifications, skill levels and experience A Ph D degree in Chemical Engineering is essential for the Senior positions

The appointments will initially be on contract basis upto five years On campus housing may be provided

The positions offer unique challenges and opportunities to work in the areas of Modelling, Design, Simulation and Control of Chemical Processes and Plants with a strong application bias Opportunities to participate in selected academic activities will be available to those with academic flair

Application forms alongwith information brochure can be obtained from the Registrar, IIT Bombay, Powai, Mumbai-400076 on request accompanied by a self addressed 25 cm x 10 cm size envelope stamped Rs 2/- quoting Advertisement number on top of the envelope The completed application forms alongwith Demand Draft for Rs 100/- drawn in favour of the Registrar, IIT Bombay should reach the Registrar on or before 9th July, 1998 SC/ST candidates need not send Demand Draft.

The last date for supply of application form is 26th June, 1998

Date 28th May, 1998 **REGISTRAR**

AGRICULTURAL SCIENTISTS RECRUITMENT BOARD

KRISHI ANUSANDHAN BHAWAN
PUSA : NEW DELHI-110 012

Advt. No. 4/98

Applications are invited for the following scientific posts under the different Institutes of the Indian Council of Agricultural Research, New Delhi.

Directors & Joint Directors of National Institutes

Pay Scale : Rs. 4500-7300

91. Director, National Research Centre on Woman In Agriculture, Bhubaneswar. (One Post)

Qualifications Essential · i) Doctoral degree in any branch of Agricultural Science/Home Science/Social Science ii) At least 5 years experience as a Principal Scientist (Rs. 4500-7300) or in an equivalent position. OR An eminent Scientist having proven record to scientific contribution working in a reputed organisation/institute having atleast 18 years experience in the relevant subject. iii) Evidence of contribution to Research/Teaching/Extension Education as supported by published work/innovations iv) Specialisation and experience in gender analysis and knowledge of its implication in agriculture and allied areas *Desirable* Experience in a Research Management Position Other things being equival, preference could be accorded to women candidates

92. Director, National Research Centre on Medicinal and Aromatic Plants, Borlavi, Anand. (One Post)

Qualifications Essential i) Doctoral degree in Horticulture or any other branch of Agricultural Sciences ii) & iii) As in Item No 91(ii) & 91(iii) above. iv) Specialisation in Horticultural Crops preferably Medicinal and Aromatic Plants *Desirable* Experience in a Research Management Position

93. Director, National Research Centre on Mithun, Nagaland. (One Post)

Qualifications Essential i) Doctoral degree in any discipline of Animal Sciences ii) & iii) As in Item No 91(ii) & 91(iii) above iv) Specialisation in any branch of Livestock Health, Breeding or Production *Desirable* . Experience in a Research Management Position

94. Director, National Research Centre for Weed Science, Jabalpur. (One Post)

Qualifications Essential Doctoral degree in Agricultural Sciences ii) & iii) As in item No 91(ii) & 91(iii) above iv) Specialisation in Weed Management research related to production/cropping/farming systems *Desirable* Experience in a Research Management Position

95. Director, National Research Centre on Yak, Dirang (Arunachal Pradesh) (One Post)

Qualifications Essential i) Doctoral degree in any discipline of Veterinary Science/Animal Science ii) & iii) As in Item No 91(ii) & 91(iii) above iv) Specialisation in any branch of Animal Health or Production *Desirable* Experience in a Research Management Position

96. Director, Central Agricultural Research Institute, Port Blair. (One Post)

Qualifications Essential i) Doctoral degree in any branch of Agriculture including livestock production, fisheries and horticulture. ii) & iii) As in Item No 91(ii) & 91(iii) above iv) Specialisation in Island/Coastal ecosystems *Desirable* Experience in Research Management Position

97. Director, Water Technology Centre for Eastern Region, Bhubaneswar. (One Post)

Qualifications Essential . i) Doctoral degree in Soils/Agronomy/Agril. Engg. ii) & iii) As in Item No. 91(ii) & 91(iii) above iv) Specialisation in Irrigation Water Management and experience in handling the water management research projects in Eastern Region. *Desirable* . Experience in a Research Management Position

98. Director, National Research Centre for Orchids, Pakyong, Gangtok. (One Post)

Qualifications Essential · i) Doctoral degree in Horticulture/Floriculture ii) & iii) As in Item No. 91(ii) & 91(iii) above. iv) Research/teaching experience in Floriculture as evidenced by published papers *Desirable* : Experience in a Research Management Position

99. Joint Director-cum-Officer Incharge, IVRI, Regional Station Hebbal, Bangalore under Indian Veterinary Research Institute, Izatnagar. (One Post)

Qualifications Essential . i) Doctoral degree in the field of Veterinary Bacteriology & Virology. ii) & iii) As in Item No 91(ii) & 91(iii) above. iv) Specialisation in Virology Vaccine Development. *Desirable* · Experience in a Research Management Position.

100. Joint Director (Research), Indian Veterinary Research Institute, Izatnagar. (One Post)

Qualifications Essential i) Doctoral degree in any discipline of Veterinary Science/Animal Science related to Animal Health/Animal Production ii) & iii) As in Item No 91(ii) & 91(iii) above. iv) Specialisation and Research experience in any field of Animal Health/Animal Production *Desirable* : Experience in a Research Management Position

Head of Division

Pay Scale Rs. 4500-7300

101. Head, Division of Fruit Crops, Indian Institute of Horticultural Research, Bangalore. (One Post)

Qualifications Essential · i) Good academic record with a Doctoral degree in Horticulture ii) Principal Scientist in the scale or Rs. 4500-7300 or in an equivalent position. OR 8 years experience as a Senior Scientist (Rs. 3700-5700) or in an equivalent position OR An eminent Scientist having proven record of scientific contribution working in a reputed organisation/institute having at least 13 years experience in the relevant subject iii) As in Item No. 91(iii) above iv) Experience in Tropical/Sub-Tropical Fruit crops as evidenced by published work.

Principal Scientist & Chief Training Organiser

Pay Scale Rs 4500-7300 *Age :* Below 50 years (There will be no maximum age limit for the ICAR employees. Relaxation to SC/ST candidates may be given in accordance with the orders issued by Govt of India from time to time)

102. Principal Scientist (Computer Application), Indian Agricultural Statistics Research Institute, New Delhi. (Two Posts)

Qualifications Essential : i) Doctoral degree in the Computer Science/Computer Application or Agricultural Statistics or Statistics. ii) 10 years experience excluding the period spent in obtaining the Ph.D degree (subject to maximum of 3 years) in research/teaching/extension education provided 3 years experience is as a Senior Scientist (Rs. 3700-5700) or in an equivalent position iii) As in Item No. 91(iii) above iv) Specialisation in database development and management.

103. Principal Scientist (Soil Chemistry Microbiology/Fertility), ICAR Research Complex for NEH Region, Barapani. (One Post)

Qualifications Essential . i) Doctoral degree in Soil Chemistry/Microbiology Fertility. ii) & iii) As in Item No. 102(ii) & 91(iii) above. iv) Specialisation in Soil Chemistry/Fertility/Microbiology and experience on Soils of high rainfall hilly region.

104. Principal Scientist (Agril. Economics), ICAR Research Complex for NEH Region, Barapani. (One Post)

Qualifications Essential . i) Doctoral degree in Agri. Economics. ii) & iii) As in Item No. 102(ii) & 91(iii) above. iv) Specialisation in Agri. Economics and Experience in Agricultural Marketing in hilly areas.

105. Principal Scientist (Animal Nutrition), National Research Centre on Camel, Bikaner. (One Post)
Qualifications Essential : I) Doctoral degree in Animal Nutrition II) & III) As in Item No. 102(II) & 91(III) above Iv) Specialisation and relevant experience to the job requirement.

106. Chief Training Organiser (Trainers Training Centre), Central Institute of Freshwater Aquaculture, Bhubaneswar. (One Post)
Qualifications Essential : I) Doctoral degree in the relevant field of Fisheries Science/Zoology with specialisation in Fish and Fishery Science II) & III) As in Item No 102(II) & 91(III) above. iv) Specialisation in designing and implementing training and TOT programmes in the field of Fresh Water Aquaculture (Fish Breeding and Culture).

Senior Scientist
Pay Scale · Rs 3700-5700 *Age* Below 45 years (There will be no maximum age limit for the ICAR employees Relaxation to SC/ST candidates may be given in accordance with the orders issued by Govt. of India from time to time)

107. Senior Scientist (Animal Physiology), National Research Centre on Mithun, Jharnapani, Nagaland. (One Post)
Qualifications Essential : i) Doctoral degree in Animal Physiology ii) 5 (Five) years experience excluding the period spent in obtaining the Ph D. degree, during service (subject to maximum of 3 years) in research/teaching/extension education as a Scientist (Rs. 2200-4000) or in an equivalent position in the relevant subject iii) As in Item No 91(iii) above iv) Experience of having concerned in ruminant physiology.

108. Senior Scientist (Plant Breeding), National Research Centre for Medicinal and Aromatic Plants, Anand. (One Post)
Qualifications Essential · Doctoral degree in Plant Breeding ii) & iii) As in Item No 107(ii) & 91(iii) above iv) Specialisation with strong background in Genetics preferably on Medicinal and Aromatic Plants.

109. Senior Scientist (Horticulture), Indian Agricultural Research Institute, New Delhi. (One Post)
Qualifications Essential i) Doctoral degree in Horticulture/Food Technology with specialisation in Post Harvest Technology ii) & iii) As in Item No. 107(ii) & 91(iii) above iv) Specialisation in storage/handling/processing of Horticultural crops

110. Senior Scientist (Horticulture), Indian Agricultural Research Institute, New Delhi. (One Post)
Qualifications Essential : i) Doctoral degree in Horticulture ii) & iii) As in Item No 107(ii) & 91(iii) above iv) Specialisation in Fruit Physiology.

111. Senior Scientist (Seed Technology), Indian Agricultural Research Institute, New Delhi. (One Post)
Qualifications Essential . i) Doctoral degree in Botany/Agri Botany/Seed Technology/Genetics and Plant Breeding ii) & iii) As in Item No 107(ii) & 91(iii) above. iv) Specialisation in Seed Testing with special reference to identification of crop and weed seeds

112. Senior Scientist (Soil Microbiology), Indian Institute of Soil Science, Bhopal. (Two Post)
Qualifications Essential i) Doctoral degree in Soil Science with specialisation in Soil Microbiology ii) & iii) As in Item No 107(ii) & 91(iii) above. iv) Specialisation in and relevant experience cognate to the job requirement.

113. Senior Scientist (Mechanical Engineering), Indian Lac Research Institute, Ranchi. (One Post)
Qualifications Essential : i) Doctoral degree in Mechanical Engineering ii) 5 (Five) years experience excluding the period spent in obtaining the Ph D degree, during service (subject to maximum of 3 years) in research/teaching/extension education as a Scientist (Rs. 2200-4000) or in an equivalent position in the relevant subject. OR Master's degree in the case of Engineering disciplines with 8 years experience in research/teaching/extension education as scientist (Rs. 2200-4000) or in an equivalent position in the relevant subject. iii) As in Item No 91(iii) above. iv) Specialisation and experience in the field of design/fabrication/testing of machinery and equipment related to fabrication of Pilot Plants.

IMPORTANT NOTE : 1) The candidates selected for appointment to the posts in Animal Science disciplines and possessing degree in Veterinary Science/Veterinary Science and Animal Husbandry followed by Masters and Doctoral degree in the relevant discipline will also be entitled to non-practicing alowance as admissible under the rules from time to time subject to fulfilment of conditions of entitlement for the same as prescribed by the Council. 2) The posts appearing at Sl No. 91 to 101 will be filled up on tenurial basis for a period of five years however, retirement age for all scientific posts is 60 years.

CLOSING DATE FOR RECEIPT OF APPLICATIONS IN AGRICULTURAL SCIENTISTS RECRUITMENT BOARD IS **28.7.1998**

(For candidates from abroad and in the Andaman and Nicobar Islands, Lakshadweep, Minicoy and Amindivi Islands, States/Union Territories in the North-Eastern Region, Ladakh division of J&K State, Sikkim, Pangi, Sub-division of Chamba, Lahul and Spiti, district of Himachal Pradesh, last date will be **14.8.1998**)

GENERAL INSTRUCTIONS : 1 For application form, please write to **the Secretary, Agricultural Scientists Recruitment Board, Krishi Anusandhan Bhawan, New Delhi-110 012.** Request for forms must specify Advertisement No and name of the post and Item No. and should be accompanied by self addressed unstamped envelope (23 x 10 cms size) 2 Separate application with separate fee, separate No Objection Certificate, separate Vigilance Clearance Certificate is required for each post 3 Application form complete in all respects, should reach the Office of the ASRB together with the application fee of Rs 8/- (No fee for SC/ST candidates) in the form of crossed Indian Postal Order drawn in favour of the Secretary, Agricultural Scientists Recruitment Board by the closing date Applications received after the closing date will not be entertained In case a candidate anticipates delay in forwarding of his application through proper channel, he must send an advance copy of the application alongwith the fee which must reach this office on or before the closing date Postal Order(s) obtained before the date of publication of advertisement and after the closing date of the application will not be accepted 4 The candidates should fill each and every column of Application Form at the appropriate place Wherever the space is not sufficient they could add extra sheet but it should be strictly in the prescribed format 5 Candidates abroad may apply on plain paper and send their applications together with an International Postal Order/Bank draft covering the application fee drawn in favour of the Secretary, Agricultural Scientists Recruitment Board so as to reach this office of ASRB by the closing date In countries where regular commercial channels are not available, the candidates can deposit the application fee in local currency with the Indian Mission/Posts abroad, who in turn will issue an R.B I draft in favour of Secretary, Agricultural Scientists Recruitment Board, New Delhi 6 The prescribed Essential Qualifications are minimum and possessing of same does not entitle candidates to be called for interview Where the number of applicants is large, the Board may restrict the number of candidates for interview to a reasonable limit on the basis of qualifications and experience higher than the minimum prescribed in the advertisement 7. If required, candidates must appear for personal interview 8 Higher initial pay may be recommended by the ASRB for specially qualified and experience candidates for all the posts. 9. T.A. contribution will be admissibl to those called for interview as per ICAR Rules. 10 Crucial dat for determining the age limit for candidates will be the closing dat for receipt of applications from candidates in India 11. The optio of use of Hindi in interviews exists in the Board. 12. Canvassing any form will disqualify a candidate.

davp 1020(2)98

Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg, New Del
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